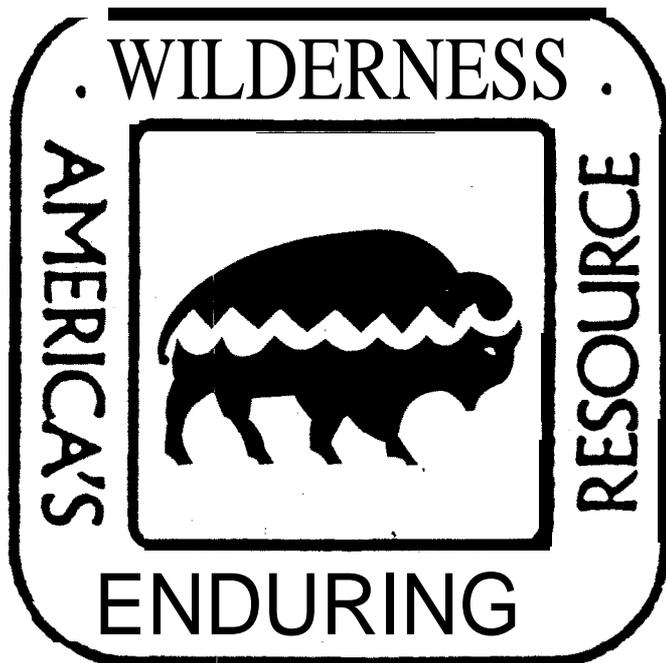


# WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN



**Buffalo National River, Arkansas**

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# BUFFALO NATIONAL RIVER

## WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN

### SUMMARY

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*A message from Superintendent, John D. Linahan.. ,*

We are pleased to announce that our work on the National River's Wilderness and Backcountry Management Plan has been completed. With the increasing popularity of the river, we are challenged to develop and maintain a balance between visitor use and resource protection, and between different visitor activities. We believe this plan is a major steps towards achieving that balance.

Various river user groups, from commercial canoe outfitter;; to horseback riders and hikers, will not be totally satisfied with all provisions of the plan. However, we believe that with its implementation, it will put us closer towards fulfilling the goals set in the 1964 Wilderness Act to manage wilderness *"...for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness so as to provide for the protection of these areas, the preservation of their wilderness character..;"* and the 1972 legislation establishing Buffalo National River *"... for the purposes of conserving and interpreting an area containing unique scenery and scientific features, and preserving as a free flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations..."* .

This document provides a summary of the plan. However, if you would like a full copy, please write to me: Superintendent, Buffalo National River, P.O. Box 1173, Harrison, AR 72602-1173.

#### PUBLIC COMMENTS ON DRAFT PLAN

A total of 2,369 comments were received for review and analysis. Of these, 1,993 were form letters either mailed by individuals or collected in the form of a petition. There were four different form letters received. The form letters expressed general opposition to any new regulation or restriction on recreational use and **supported** development of additional recreational facilities. The vast majority of form letters were signed by persons residing in the counties surrounding the National River.

There were a total of 376 letters submitted by individuals or organizations. General support for continued horse use was expressed in **103** letters, many of which were generated by a belief that horse use was to be completely eliminated by the National Park Service.

Support for completion of the Ozark Highlands Trail through the Lower Buffalo Wilderness Unit was expressed in 172 letters. Most of the supporters of the Ozark Highlands Trail expressed opposition to permitting horse use on hiking trails.

General support for providing greater recreational use of the National River was expressed in 41 letters. Concern about the current level of recreational use and its impact on natural and cultural resources, as well as wilderness experiences, and support for additional protective measures was expressed in 60 letters.

These numbers should be used only as a            indication of the diversity of

input received. It should be noted that one letter might contain comments concerning several different issues.

A complete summary of the comments and the NPS response is available upon request.

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## SELECTED ACTIONS

The actions proposed by this Plan are:

Implement a "Limits of Acceptable Change" approach to wilderness and backcountry management. Define four backcountry management zones which describe the acceptable range of desired resource, social, and managerial conditions in each zone. A summary of these management zones is presented on page 9 of the final plan.

a) Defining resource and social indicators and standards. Indicators are relevant, measurable factors which signify the condition of the backcountry or wilderness setting. Standards are quantified threshold levels established for each indicator. Standards are set at the upper level of what is considered acceptable, not necessarily what is desirable. A summary of the indicators and standards for each management zone are found on pages 11-12 of the final plan.

b) Designating all backcountry and wilderness lands in ~~one~~ of the four backcountry management zones. These designations are shown in Appendix D of the final plan.

c) Implement monitoring programs to determine whether standards are being met. Wherever standards are exceeded, management action will be taken to restore the conditions to meet the standards established.

## RIVER USE

Continue to manage river use under the existing River Use Management Plan. This plan has guided river management on the Buffalo since 1983. Overall limits on the number of rental boats permitted will continue to be the principle means of managing use levels. Table 2 on page 16 of the final plan indicates the maximum numbers of boats per day on each river segment.

### Ozark Highlands Trail

Identify and develop a long-distance hiking trail route for the Ozark Highlands Trail (Tyler Bend to **Sylamore** District of the Ozark National Forest) following completion of a separate site specific environmental assessment. In determining the Ozark Highlands Trail route through the Lower Buffalo Wilderness Unit, a primary objective will be to minimize the amount of new trail construction required and avoid the interior areas of the Lower Buffalo and Leatherwood Wildernesses.

### Erbie to Carver Horse Trail

Identify and develop long-distance horse trail route **from** Erbie to Carver following completion of a separate site specific environmental assessment. This trail will utilize existing abandoned roadways and avoid river crossing as much as possible.

### Primitive Routes

Provide for traditional horseback use by identifying a network of primitive routes for horseback riding utilizing abandoned roads and road **traces** in the area from the south end of Boxley Valley to Highway 7. The NPS would not maintain, sign or mark primitive routes. The **Primitive** Routes are intended to serve the needs of riders already familiar with the route. Users will be allowed to clear a limited amount of vegetation to keep the routes open. The NPS will provide maps indicating the location of **designated** routes and will consult with riding groups and others in determining which routes to designate.

### Cross-country Horse Use

The use of horses will be restricted to designated maintained trails and primitive routes from the south end of Boxley Valley to Highway 7 and a ¼ mile area surrounding the Cook Hollow/Cow Creek Trail in the Lower Wilderness. In all ~~other~~ backcountry areas without maintained horse trails horses and other stock may continue to be ridden on abandoned roads and gravel bars.

### Commercial Horse Operations

Require concession permits for all proposed commercial horse services. Commercial stock operations will not be approved in Wilderness.

### Horse Camps

Develop a drive-in horse camp at Woolum and consider sites for such camps at Pruitt and Carver following horse trail development in those areas.

### Voluntary Guidelines

Adopt voluntary "Leave No Trace" guidelines for size of groups, selection of backcountry campsites, use of campfires and sanitation.

### Motorboat Use

Maintain current motorboat restrictions which prohibit **motors** up stream of the Erbie ford and limit use elsewhere to motors with ten horsepower or less.

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The planning process was conducted over a three year period involving various National Park Service staff, other government agencies, interested businesses and organizations, and a task force representing conservation organizations, commercial outfitters and hiking, riding and canoeing clubs.

BUFFALO NATIONAL RIVER  
WILDERNESS AND BACKCOUNTRY PLAN

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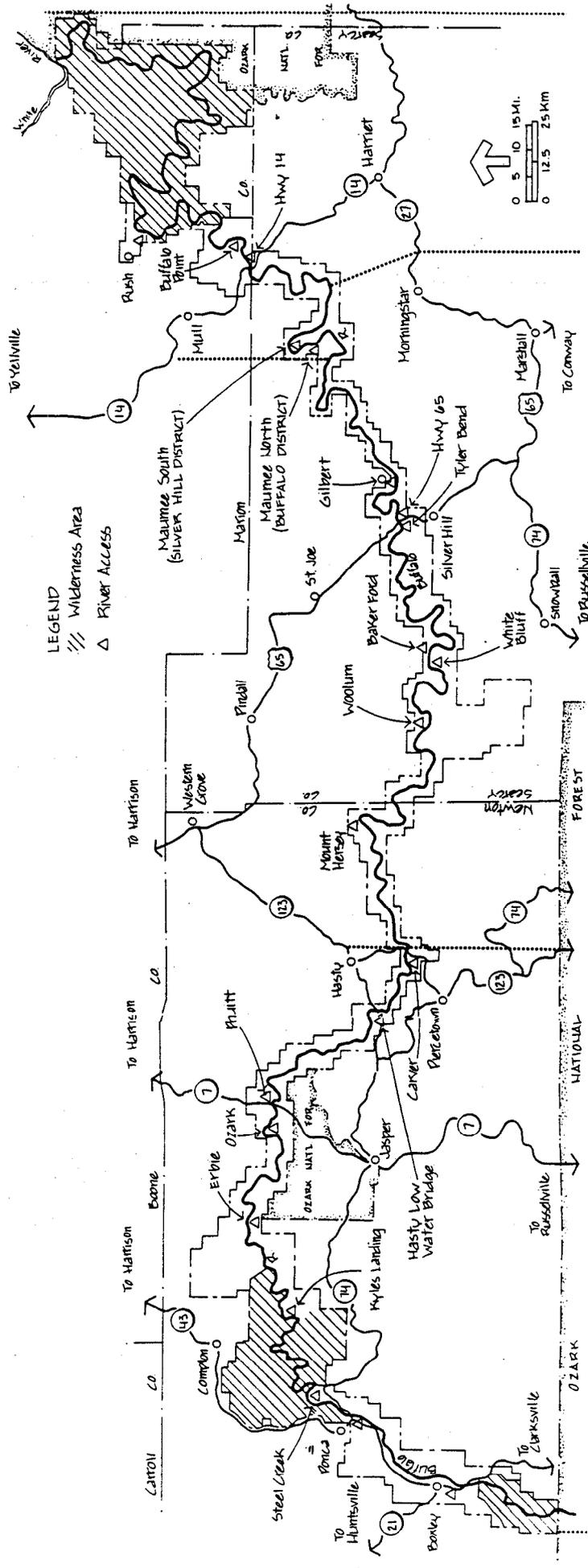
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PRUITT DISTRICT  
UPPER RIVER

SILVER HILL DISTRICT  
MIDDLE RIVER

BUFFALO DISTRICT  
LOWER RIVER

**BUFFALO NATIONAL RIVER**  
Buffalo National River • Arkansas  
U.S. Dept. of the Interior • National Park Service

## Section 1 - INTRODUCTION

Puroose of the Plan: The Wilderness and Backcountry Management Plan establishes goals, objectives, and standards for managing Buffalo National River's backcountry and wilderness lands. The plan includes management policies and actions to achieve these goals and objectives. The plan's overall goal is to preserve Buffalo National River's natural and cultural resources unimpaired for the enjoyment of present and future generations.

### Wilderness and Backcountry Manaagement Objectives:

Provide a broad range of backcountry experiences ranging from semi-primitive settings managed to encourage outdoor recreational use to wilderness settings managed to provide outstanding opportunities for solitude and other wilderness dependent activities.

Establish measurable indicators and standards for biophysical and social conditions, **continously** monitor the condition of those indicators, and implement management **policies** and programs to prevent degradation of backcountry resources and visitor experiences.

Manage designated wilderness lands in accord with the purposes and requirements of the Wilderness Act of 1964 and National Park Service management polices.

Develop and implement a coordinated interpretive program to educate backcountry users in "No Trace" practices which protect backcountry resources and experiences.

Perpetuate or restore ecosystems that are as natural as possible, retaining all of the ecosystem **components** and their functional relationships.

Scope of the Plan: The plan applies to the backcountry and designated wilderness areas within Buffalo National River. "backcountry" is defined in National Park Service Guidelines (NPS-77) as follows:

The term backcountry, refers generically to primitive, or little developed park lands or waters...Developments within backcountry areas are generally limited to trails, unpaved roads and administrative facilities associated with dispersed recreational use.

Wilderness are those areas which have been designated by law as part of the National Wilderness Preservation System. The term "backcountry" refers to all other

undeveloped portions of the National River. This plan focuses primarily on managing recreational use of both wilderness and backcountry areas. Some types of recreational use (i.e. caving) or significant resource concerns (i.e. water quality) are addressed in separate plans related to that specific use or resource.

**Area Description:** Buffalo National River is located in the Ozark Highlands of northwest Arkansas. It was **included** in the National Park System in 1972 *"... for the purposes of conserving and interpreting an area containing unique scenery and scientific features, and preserving! as a free flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations.. ."*

The Buffalo River watershed covers 1323 square miles (846,720 acres). From its headwaters in the Boston Mountains, the river flows eastward for 151 miles to its confluence with the White River. The lower 135 miles of the Buffalo River is administered as a National River by the National Park Service. The U.S. Forest Service administers the uppermost sixteen miles of the river from the headwaters to the National River boundary.

The National River boundaries encompass 148 square miles (95,730 acres) forming a linear land unit. The Master Plan (1977) provides for a development zones totaling 8,190 acres and 9,407 acres in three private-use zones. The rest of the National River is classified as a **conservation** zone of 78,133 acres. This conservation (natural) zone includes lands reserved use and occupancy rights as well as agricultural lands maintained as hay fields (3,000+ acres). Approximately 80% of the National River is considered "backcountry". Designated wilderness encompasses 36,000 acres in three separate units.

**Reaional Perspective:** The Ozark and Ouachita Highlands include a wealth of public land providing wilderness and backcountry recreational opportunities. Within a 150 mile radius of the Buffalo National River are 4.2 million acres of National Forest lands. The Ozark, Ouachita and Mark Twain National Forests contain 19 designated wilderness areas covering 194,917 acres. An additional 9,874 acres of wilderness are designated on two National Wildlife Refuges (**Mingo** in MO and **Big Lake** in AR) within the region. Long distance hiking opportunities are provided by the Ozark Highlands Trail which crosses the Ozark National Forest and extends to the Buffalo National River. Nine streams on the Ozark, Ouachita, and Mark Twain National Forests are in the National Wild and Scenic Rivers System. Ozark National Scenic Riverways in southern Missouri includes 134 miles of Current and Jacks Fork Rivers. Within a two hour drive of the Buffalo River, five U.S. Army, Corps of Engineer reservoirs, provide boating, fishing, and camping opportunities.

Five urban centers are within a three hour drive of Buffalo National River: Springfield Missouri, Tulsa Oklahoma, Fayetteville-Springdale Arkansas, Memphis Tennessee, and Little Rock Arkansas. The area within a 250 mile radius of the river has a population of approximately seven million people. Residents of Arkansas and the six surrounding states account for 87% of Buffalo National River's visitation (Ditton, 1981).

## Section 2 - PLANNING CONSIDERATIONS

Management of the backcountry and wilderness lands within Buffalo National River, is guided by federal law, National Park Service policies, and guidelines. Management policies are based on the statutory provisions of the 1916 NPS Organic Act (16 USC 1 et. seq.), the 1964 Wilderness Act (16 USC 1131). National Park Service Management Policies (1988) establish consistent servicewide direction for the preservation, management, and use of wilderness and backcountry. Additional guidance for backcountry recreation management is found in NPS-77. Natural Resource Management Guidelines (1991).

Relationship to other Plans: The Final Master Plan (1977) for Buffalo National River provides general guidance for the management and development of the park. The Resource Management Plan (1994) provides more detailed direction with respect to the management of natural resources. The River Use Management Plan (1983) sets visitor use limits for various sections of the river. Other planning documents which relate to backcountry management are the Cave Management Plan (1984), Fitton Cave Action Plan (1984), Water Quality Monitorina Plan (1989), Fire Management Plan (1988), Trail Plan (1987), and Road Svstem Evaluation (1986).

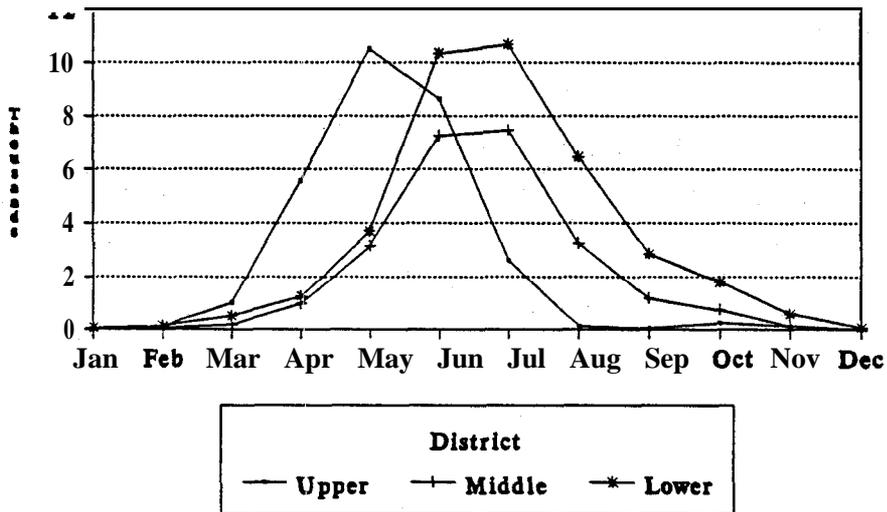
## Section 3 - CURRENT SITUATION

Recreational Uses: The park has approximately one million visitors annually. Recreational activities include boating, camping, fishing, hiking, swimming, backpacking, horseback riding, hunting and caving. Canoe float trips are the most popular recreational use but hiking and horseback riding are increasing as the trail system expands.

Visitor use follows seasonal patterns according to temperature and river levels. Day hiking, backpacking and horseback riding are most popular in the spring and fall. Hot summer weather limits some activities, but boating, fishing and camping still popular during the summer. Accurate backcountry use data has been difficult to obtain. Backcountry camping permits are not required. River use is estimated from canoe rental receipts. Trail use is estimated based upon vehicles at trailheads, observations on trails, and in some cases electronic counters.

**River Use:** Water levels on the Buffalo River fluctuate widely with seasonal rainfall. During average years, water levels are adequate for floating on the entire river from November through May. Peak river use begins in April and ends in August. With decreasing precipitation in June, the “floatable” portion of the river recedes in a downstream direction. The most intensive use occurs on the upper river from Ponca to Pruitt during April and May. On the middle and lower sections, river use peaks from June to July. From Maumee to the confluence with the White River, adequate flows for canoeing usually exist year-round.

### Buffalo National River River Use - 1993 (Boats)

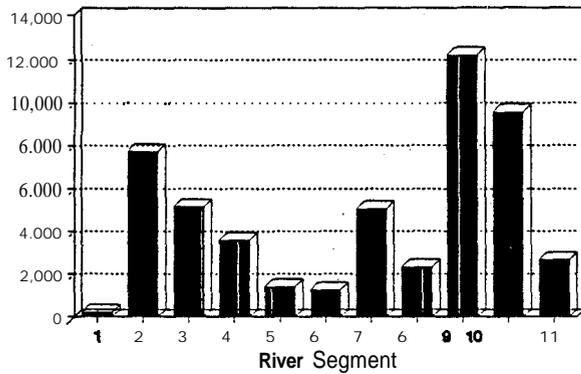


Based on NPS Publ. 1, Use Reports

Figure 2

River use along the Buffalo is not evenly distributed over the entire length of the river. Thirty percent of the river receives seventy percent of the canoe traffic. Two of the three most used segments of the river pass through wilderness (Ponca to Kyles and Buffalo Point to Rush). Only a small portion of the river use involves overnight stays in backcountry areas.

Annual Canoe Use (Estimated)  
Buffalo National River



Source: 1981 Concession receipts

River Segments	Miles
1	Boxley (Hwy 21) to Ponca: 6.5
2	Ponca to Kyles Landing: 10.1
3	Kyles Landing to Pruitt: 13.2
4	Pruitt to Carver: 11.3
5	Carver to Mt. Hersey: 6.9
6	Mt. Hersey to Woolum: 8.5
7	Woolum to Gilbert: 20.7
8	Gilbert to Maumee: 12.9
9	Maumee to Buffalo Point: 10.2
10	Buffalo Point to Rush: 7.9
11	Rush to Buffalo City: 24.3

A study of river recreation on the Buffalo River was conducted in 1979-80 (Ditton, 1979/1 981). This study utilized extensive surveys of river floaters on the upper (Ponca to Hasty) and lower river (Maumee to Rush).

The survey indicated differences in the experience level and expectations of floaters on the upper and lower reaches of the river. Upper river floaters were more experienced, with only 17% floating for the first time compared to 40% first time floaters on the lower river. Upper river floaters tended to float with friends while lower river floaters floated with family members. For upper river floaters the river trip was the primary purpose of their visit but for lower river floaters river trips are a means to other family-oriented activities. Upper and lower river floater's perception of crowding varied; 43% of upper river floaters felt the number of people reduced their overall enjoyment while only 22% of lower river floaters felt that way.

Perceptions of crowding have probably resulted in some experienced floaters seeking river recreation elsewhere. A 1982, survey of floaters on the Little Missouri, Cossatot, Big Piney and Mulberry Rivers in Arkansas indicated 78.7% of those surveyed had floated the Buffalo River at least once and 60.9% of those were "displeased" with the increased use there. More than half (54.4%) said their visits to the Buffalo had become less frequent due to the increase in visitation. Additional

information with respect to river use can be found in the River Use Management Plan (NPS 1983) and Whitewater Recreation in Arkansas (Ark. Dept. of Parks and Tourism 1984).

**Trail Use:** Trail use has increased steadily with increased trail development. Initially, most trail use occurred on the extensive network of abandoned or closed roads which criss-cross the National River. Beginning in the mid-1980s, a substantial trail construction effort was begun. Hiking trails, including major portions of the *Buffalo River Trail*, have been completed on the upper river between Ponca and Pruitt and in the Tyler Bend area. Many old roads have been incorporated into the River's trail system, especially as horse trails.

Most trail use consists of day hikers and riders. Horse use is increasing river-wide, but is most concentrated in the Upper District. An inventory of backcountry trails is found in Appendix C.

**Hunting and Fishing:** The National River's enabling legislation specifically provides for sport hunting and fishing. The NPS cooperates with the Arkansas Game and Fish Commission (AG&FC) to manage wildlife and hunting and fishing on the National River. The National River backcountry provides significant opportunities for deer, squirrel, and turkey hunting. Trapping is prohibited.

Sport fishing is also a popular activity on the Buffalo. Favored game fish include black bass, bream, and catfish as well as several species of suckers. A survey of floaters in 1979 and 1980 indicated that fishing was a primary motivation for only 13.7% of those canoers surveyed (Ditton 1979 & 1980). A creel survey conducted by the AG&FC in 1991 and 1992 indicated that angling pressure on the Buffalo was low (Johnson 1993). Only 11% of floaters surveyed were anglers.

**Private Uses:** Private use includes three major types; private ownership in Boxley and Richland Valleys and at the "Camp Orr" Boy Scout Camp, use and occupancy reservations (U&O), and agricultural special use permits. Private lands and U&OS are closed to public use. Areas covered **by** agricultural special use permits are closed to camping. The U&OS and hay fields are widely dispersed all along the river but are concentrated in the Upper and Middle Districts.

## Section 4 - PLAN ORGANIZATION

*"The wilderness management plan will establish indicators, standards, conditions and thresholds above which management actions will be taken to reduce impacts. The National Park Service will monitor resources and document use. Where resource impacts -or demands for-use exceed established thresholds -or capacities, superintendents may limit or redirect use."*

National Park Service Management Policies (1988), page 6:5

This plan uses the concepts outlined in Limits of Acceptable Change (LAC) System for Wilderness Planning, by Stankey et al. (1985). LAC is a planning process consisting of a series of interrelated steps leading to the development of measurable objectives, defining desired backcountry and wilderness conditions. It also delineates the management actions necessary to maintain or achieve desired conditions. Emphasis is placed on defining and achieving the resource and social conditions desired for the area rather than determining how many users an area can absorb (i.e. carrying capacity).

The LAC process requires managers to define desired backcountry and wilderness conditions and to undertake actions to maintain or achieve these conditions. The process consists of nine major steps:

- Step 1** identifies area concerns and issues.
- Step 2** defines and describes opportunity classes (management zones).
- Step 3** is the process of selecting- resource and social indicators which represent backcountry conditions.
- Step 4** is an inventory to determine the condition of the indicators selected.
- Step 5** sets specific standards for the indicators selected.
- Step 6** identifies alternative opportunity class allocations.
- Step 7** identifies management actions required to implement each alternative.
- Step 8** is the evaluation and selection of an alternative.
- Step 9** is the implementation of the preferred alternative and the establishment of a program to monitor indicators.

Goals, by definition, are broad statements of intent, direction and purpose. Management objectives are statements that describe the specific conditions sought, serve as criteria in determining what management actions are needed, and are used as the basis for evaluating the effectiveness of management actions.

## Section 5 - MANAGEMENT ZONES, INDICATORS, AND STANDARDS

### Backcountry Management Zones

All backcountry areas of Buffalo National River are designated in one of four backcountry management zones. Each management zone is described in terms of the desired resource, social, and managerial conditions for that area. These descriptions provide guidance for management decisions related to backcountry resources and use.

Management zones are designated based upon the following criteria:

1. Type and amount of use;
2. Accessibility and challenge;
3. Opportunity for solitude;
4. Current resource conditions;
5. Management uses.

The maps in Appendix D depict the management zone designations.

## Backcountry Management Zones

### Zone I

Natural environment with little evidence of recent impact by humans. Recreation impacts are not noticed by most visitors. Campsites are few in number and infrequently used. Loss of vegetation at campsites is short term and recovers each year. Most nonrecreational impacts are greater than 30 years old.

### Zone II

Natural environment with some evidence of human impact in the form of maintained trails and campsites. Impacts are noticed by some visitors. Campsites are few in number but some are used frequently. Loss of vegetation at campsites is noticeable but largely recovers each year. Most nonrecreational impacts are greater than 20 years old.

### Zone III

A natural environment with moderate impact from recreational activities. Impacts in accessible sites or high use areas are visible to most visitors. Campsites are in moderate density with some being frequently used. Some vegetation in campsites does not recover substantially each year and small areas of bare ground remain. A few low standard roads and hay fields may exist but overall road density is very low.

### Zone IV

Area is moderately modified environment characterized by agricultural fields or roads interspersed throughout the area. Impacts in high use areas are obvious to visitors. Campsites are numerous and many are frequently used. Vegetation in high use camp sites does not recover from year to year. Compacted and exposed soil are common in sites accessible to motor vehicles.

### Social Setting

Outstanding opportunities for solitude exist. Very few other groups are encountered and the sense of challenge is relatively high. Group sizes are usually small.

Opportunities exist for solitude during off-season months. Other groups are often encountered but the sense of challenge is still high. Large groups are uncommon.

Opportunities for solitude often exist only during non-peak periods. Other groups are commonly encountered and the sense of challenge and risk is moderately high. Large groups are fairly common.

Opportunities for solitude are rare during peak periods. Other groups are usually within sight during peak periods and the sense of challenge is relatively low. Large groups are common.

### Managerial Setting

No trails are maintained and no signs are provided to assist access. Permanent facilities or structures are not provided. Ranger patrols are very infrequent. Regulatory restrictions are usually not required due to low use levels.

Trails will be maintained for light use. Trail signs will be limited to direction information. Permanent facilities will be limited to those required for resource protection. Ranger patrols are infrequent. Regulatory restrictions may be needed in some cases to protect resources.

Trail signs direct, distance and interpretive information will be provided. Permanent facilities will be provided for resource protection. Ranger patrols are fairly frequent. Regulatory restrictions may be needed in some cases to protect resources.

Trails will be provided to encourage recreational use. Trails and signs will be maintained to accommodate heavy use. Permanent facilities will be provided to aid visitors. Ranger patrols will be frequent. Some regulatory restrictions may be required to protect resources while accommodating heavy use.

## Indicators and Standards

indicators and standards are used to help determine when corrective management actions should be implemented. Indicators are relevant, measurable factors which signify the condition of the backcountry setting. Standards are threshold levels established for each indicator. Standards are set at the upper level of what is considered acceptable, not necessarily what is desirable. Monitoring of indicators will enable management to know, whether backcountry conditions are getting better or worse. Management still has the latitude to correct unanticipated problems not addressed by standards. The indicators and standards for each management zone are displayed in table 1.

A policy of nondegradation will be employed at Buffalo National River. The nondegradation policy seeks to prevent further degradation of current resource and social conditions in areas which are still well within standards and restore substandard settings to minimum levels.

BNR Wilderness & Backcountry Plan

Indicators & Standards  
Buffalo National River Wilderness/Backcountry Plan

TABLE 1

Indicator	Standards				Comments
	Class I	Class II	Class III	Class IV	
# of Groups Encountered/day outside of the river corridor	All sites rated 1	No more than 5% of sites rated 2, no sites rated as 3	No more than 5% of sites rated as 3	No more than 10% of sites rated as 3	No existing data available on current levels. Monitoring program will be required.
Litter in Campsites; 1 = < half full, 2 = < 2.5 gal. bucket 3 = > 2.5 gal. bucket	All sites rated 1	No more than 5% of sites rated 2, no sites rated as 3	No more than 5% of sites rated as 3	No more than 10% of sites rated as 3	Current campsite inventory indicates; Cat. 1 Sites = 17 Cat. 2 Sites = 42 Cat. 3 Sites = 8
Litter on River; "Can Index", # of cans per mile of river	All sites rated 1 or 2	At least 75% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1, 2 or 3, no sites rated 5	Standards to be developed upon completion of surveys.
Overall Campsite Condition; 1 = Best to 5 = Worst	All sites rated 1 or 2	At least 75% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1, 2 or 3, no sites rated 5	Based upon existing campsite inventory #CC1 sites = 3, CC2=19, CC3=20, CC4=21, CC5=3
Total Campsite Area (sq. ft.) Impacted	All sites; less than 500 sq. ft.	All sites; less than 1000 sq. ft.	At least 90% of sites; less than 2000 sq. ft., none greater than 3500 sq. ft.	At least 90% of sites; less than 2500 sq. ft., none greater than 5000 sq. ft.	Based upon existing campsite inventory # of sites; <500=10, <1000=26 <2000 = 49, <2500= 52 (67 total)

Table 1 (Cont.)

Indicator	Zone 1	Zone 2	Standards	Zone 3	Zone 4	Comments
% Soil Exposure within Campsites 1 = 0-5%, 2 = 6-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-95%, 96-100%.	All sites rated 1	All sites rated 1 or 2	All sites rated 1, 2 or 3	All sites rated 1, 2, 3 or 4		Based upon existing campsite inventory; # of sites rated 1=14, 2=13, 3=9, 4=4, 5=13, 6=14.
# of Rock Fire Rings per campsite	0	0	No more than 1	No more than 1	No more than 1	
<b>Water Quality</b>						
<i>Fecal Coliform</i> Bacteria; Colonies per 100 milliliters of water sample	All samples within 1/2 the standard deviation of the geometric mean.	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Based upon <u>BNR Water Quality Report; 1985 - 1990</u> mean values under base flow conditions. When standards are exceeded site will be retested to verify value and attempt to determine source.
Turbidity; (FTU)	All samples within 1/2 a standard deviation of the mean.	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Based upon <u>BNR Water Quality Report; 1985 - 1990</u> mean values under base flow conditions.

## Section 6 - MONITORING PROGRAMS

All indicators listed in Table 1 require a monitoring program to determine whether they are within the standards set for each management zone.

Camosite Condition: Monitoring procedures for litter in campsites, overall campsite condition, total campsite area, campsite soil exposure, and the number of fire rings per site are detailed in the Buffalo National River Backcountry Camosite Inventory and Monitoring Procedures (1991). All sites will be monitored at least once every five years on a rotating basis. Sites which failed to meet standards will be monitored the following year to determine whether corrective actions have been successful. A database + data management program has been developed to store and analyze all campsite monitoring data.

Number of Boats/Mile of River/Day: This indicator serves as an approximation of the density of canoes on various segments of the river and the resulting crowding. Monitoring will be accomplished by examination of NPS concession receipts to determine the number of rental boats using each river segment daily. Total river use will be calculated by adding the estimated number of private boats.

Number of Groups Encountered per Day: This indicator serves as an index of crowding in backcountry areas away from the river, specifically on trails. An initial survey will be conducted to determine the average number of encounters on various types of trails. This will be correlated to the overall number of people using the trail. Monitoring will then be based upon trail counter readings and the estimated number of group encounters to be expected.

Litter on the River: A monitoring program will be developed which surveys sample portions of the river to determine the number of beverage cans recovered per mile of river. Beverage cans serve as an index of the overall amount of litter generated by recreational use.

Water Quality: Monitoring of water quality indicators will be accomplished through the existing monitoring program. Site specific investigations will be carried out in additional areas if evidence of water quality degradation is found.

## Section 7 - POTENTIAL MANAGEMENT ACTIONS

**In cases** where established standards are not being met or the condition of indicators is deteriorating, a management response to improve condition will be required. The appropriate response will vary depending upon the specific problem to be corrected. When determining the most effective and appropriate response, priority will be given to actions which are effective but impose the least restrictive requirements on the public and require the least infrastructure development. If monitoring indicates the initial management actions are ineffective, more restrictive or intensive actions will be implemented and tested through continued monitoring. The following tables provide a guide for determining appropriate management actions directed at improving backcountry conditions.

### Potential Management Actions Improving Unacceptable Site Conditions (In order o'f Preference)

#### Manaaement Zone 1 & 2

- \***Offsite** Leave No Trace Education
- \*Contact Repeat Users
- \*Campsite Restoration
- \*Designated Campsites
- \*Limit Size of Groups Camping in Wilderness
- \*Prohibit Open Fires
- \*Seasonal Campsite Closures
- \*individual Campsite Closures
- \*Area Camping Closure
- \*Camping Permit

#### Manaaement Zone 3 & 4

- \*Information and Education
- \*Increase Ranger contacts
- \*Contact Repeat Users
- \*Campsite Restoration
- \*Limit Size of Groups Camping in Backcountry Areas.
- \*Designate Campsites
- \*Campsite Closures
- \*Prohibit Stock
- \*Install Toilets
- \*Require Camping Permits

Directed at Reducing Crowding  
(In Order of Preference)

Management Zone 1 & 2

\*Encourage Use in Other Areas Outside of Wilderness

\*Modify or Remove Existing Facilities

\*Limit Size of Groups Camping in Wilderness

\*Restrict number of concessioner launches at specific locations on high use days.'

\*Camping Permits

Management Zone 3 & 4

\*Encourage Use at Other Times or Places

\***Improve** or Modify Existing Facilities

\*Require Staggered Launches at access areas.

\*Restrict number of concessioner launches at specific locations on high use days.

\*Limit Size of Groups Camping in Backcountry Areas.

\*Camping Permits

Section 8 - RIVER USE MANAGEMENT

During the **1970's**, steady increases in river use on the Buffalo led to problems: crowding at access points, congestion at sites along the river, conflicts between users, litter, and improper human waste disposal. These problems lessened the quality of the river experience for some and resulted in resource damage to some areas. In an effort to address these concerns, a River Use Management Plan (RUMP) for Buffalo National River was completed in 1983. The RUMP established maximum use levels for various river segments (between major access points) for weekend days and week days. In terms of use the RUMP provides a variety of river float trip experiences.

Low Use (up to 8 boats per mile).

Moderate Use (between 9 and 20 boats per mile).

High Use (over 20 boats per mile).

The maximum number of watercraft (canoes, johnboats, kayaks, rafts, and inner tubes) to be permitted on a given section of the river on a given day is determined by multiplying the maximum number of boats per mile by the number of river miles in the individual river section.

Table 2 indicates the maximum number of boats per day permitted for each segment according to the current River Use Management Plan (U.S.D.I., 1983).

Table 2

Maximum Number of Boats Per Day  
(River Use Management Plan, 1983)

River Segment (miles)	Weekend Day (Fri.- Sunday) <small>Use category/Max. # boats per day.</small>	Week Day (Mon. - Thursday) <small>Use category/Max. # boats per day.</small>
Hwy. 21 to Ponca at Hwy. 74 (6.0)	low/49	low/49
	high/494	moderate/206
Kyle's to Pruitt (13.2)	high/488	moderate/264
Pruitt to Carver (11.3)	moderate/226	low/90
(7.0)	low/52	low/52
Mount Hersey to Woolum (8.4)	low/68	low/68

River Segment (miles)	Weekend Day (Fri.- Sunday) <small>Use category/Max. # boats per day.</small>	Week Day (Mon. - Thursday) <small>Use category/Max. # boats per day.</small>
Woolum to Tyler Bend (15.5)	moderate/302	low/l 21
Tyler Bend to Gilbert (5.6)	moderate/l 12	moderate/l 12
Gilbert to Maumee (11.5)	moderate1258	moderate1258
Maumee to Buffalo Point (10.6)	high/490	high/490
Buffalo Point to Rush (7.4)'	high/277	high/277
Rush to the White River (23.4)'	low/l 94	low/l 94

Wilderness Segments

implementation of the RUMP requires ongoing monitoring of use on each segment of the river. Priority will given to high use segments within wilderness areas (marked by an \*). Results from these surveys will be evaluated to determine whether levels of use remain within the limits set by the RUMP. The RUMP also outlined strategies to limit use if the maximum use levels are exceeded on more than 2-3 days in one season. The strategies are:

1. Require concessioners to distribute their put-ins to more than one location. Only a certain percentage of their boats could be launched at a given location, the remainder would have to launched at other access points;
2. Require concessioners to stagger put-in times at certain access points.
3. Require a permit system for private boaters.

Depending upon the extent. of use and resulting impacts, these strategies may or may not be required. If they are needed, the NPS will analyze the impacts of these measures and consult with interested segments of the public and with concessioners before implementation.

River use surveys have been conducted (1991-94) to determine river use on some sections of the river. Some popular high use segments, such as from Ponca to Kyles, have remained below the maximum limits. However, moderate and low use segments, such as Pruitt to Carver, have exceed the maximum limit by more than 100% during a portion of the float season.

Boats rented from NPS concessionaires account for 75-90% of the river use during the peak use seasons. Limiting the overall number of rental boats available is the

only direct management action currently utilized to limit river use. Each concessioner's allotment of boats must be launched or picked up within their assigned district. The districts are as follows; Upper - western boundary to Mt. Hersey, Middle - Mt. Hersey to Maumee, Lower - Maumee to the White River.

Commercial Boats Authorized by District/Type

	<u>Canoes</u>	<u>Johnboats</u>	<u>Rafts</u>
Upper District	441	0	19
Middle District	327	10	15
Lower District	500	15	10
White River	0	85	12
Totals	1250	110	56

Concessioners must either put-in or take-out in their own district at approved locations, except when renting boats for trips of four days or longer. Given the seasonal use patterns in different (districts, it is rare for all of the concessioner's authorized boats to be on the river on the same day. Some concessioners do not rent rafts even though they have authorization to do so. In the past several years actual commercial **johnboat** use has been considerably below the level authorized.

## Section 9 - WILDERNESS MANAGEMENT

The Wilderness Act of 1964 defines wilderness as an area:

where the earth and its community of life are untrammelled by man;  
of undeveloped federal land retaining its primeval character and  
influence;  
which generally appears to have been affected primarily by the forces  
of nature;  
which is protected and managed so as to preserve its natural  
conditions;  
which has outstanding opportunities for solitude or a primitive and  
unconfined type of recreation;  
which may also contain ecological, geological, or other features of  
scientific, educational, scenic, or historical value.

Public Law 95-625, dated November 10, 1978, established the Buffalo National River Wilderness Area in three separate units (See maps in Appendix B).

Upper Buffalo Wilderness (UBWU);	2,200 Acres
Ponca Wilderness (PWU);	11,300 Acres
Lower Buffalo Wilderness (LBWU);	22,500 Acres
Total:	36,000 Acres

Wilderness Management Goals and Objectives: The primary goal of wilderness management, as defined by the Wilderness Act, is to administer these areas "for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and *enjoyment* as wilderness so as to provide for the protection of these areas,' the preservation of their wilderness character...".

Wilderness Management Objectives:

--Provide for the long-term protection and preservation of the area's wilderness character under a principle of non-degradation. The area's natural condition, including opportunities for solitude, opportunities for primitive and unconfined types of recreation, any ecological, geological, or other feature of scientific, educational, scenic or historical value will be managed so that it remains unimpaired.

--Manage Buffalo National River lands adjacent to wilderness in such a manner as to protect and preserve the wilderness character of the

wilderness units. In cooperation with the U.S. Forest Service, recognize and manage contiguous wilderness units as cohesive wilderness areas by developing **compatible** management objectives, policies, and actions.

--Provide opportunities for wilderness dependent recreational activities while limiting regulatory restrictions to the level required to preserve wilderness character and resources unimpaired for future use and enjoyment as wilderness.

--Use the minimum of tools, equipment, or structures to successfully and safely accomplish wilderness management objectives. Exclude or remove unnatural visual and noise **intrusions** from the wilderness to the maximum extent possible.

--Provide information, education and interpretation to the public in order to promote appreciation for wilderness as a natural resource.

The Wilderness Act provides for recreational use and certain other uses within wilderness, but only those uses which do not conflict with the overriding purpose of the land **as wilderness**. In short, the higher value of wilderness designation is the creation, **by law**, of an area where Earth and its community of life are untrammled by man. The result is far more than just creation of areas within parks where motorized uses, roads, and visitor service areas are prohibited or an area set aside for canoeing or backpacking. The result is an area that is to be kept forever wild, where the presence of humans is permitted on a temporary basis and only on the condition that this presence does not interfere with ongoing natural processes or other values of wilderness.

Status of Buffalo National River Wilderness:, When Congress created the Buffalo National River Wilderness Area in 1978, it designated 10,529 acres as wilderness and identified an additional 25,471 acres as potential wilderness additions. 'Some of the potential additions were still privately owned and Congress directed the National Park Service to acquire those lands and once acquired to manage them as wilderness. The law provided a process to convert the potential additions to designated wilderness through publication of a notice in the Federal Register that all uses, prohibited by the Wilderness Act, had ceased.

Such a notice was printed in the Federal Register on October 18, 1993. This notice designated all but 1,007 acres of the potential wilderness addition acreage as wilderness. The remaining potential additions are divided between nine separate parcels in the three units of the BNR Wilderness Area. Most of those remaining are use and occupancy reservations which will expire by the year 2004.

The only exception is a 180 acre parcel owned by the Boy Scouts of America within the boundaries of the Ponca Unit. This undeveloped land is part of Camp Orr and the Congress specifically stated their intentions regarding its status.

*" The committee agreed to exclude from potential wilderness addition, at this time, that acreage owned by the Boy Scouts on the same side of the river where wilderness is **designated**. "* House Committee Report No.1 2536

The Camp Orr area had been identified as one of three private use zones in the National River's legislative history. In 1984, the National Park Service acquired a scenic easement on all of the Camp Orr property to prevent incompatible development and use. Since nonfederal land may not be designated as wilderness and Congress has made specific provisions, the National Park Service will defer acquisition of Tract No. 32-1 11 so long as use and ownership of the property remain unchanged.

#### Wilderness Unit Descriptions

The **Upper Buffalo Wilderness Unit** is located in the westernmost portion of the National River. This unit adjoins the Upper Buffalo Wilderness Area (11,746 acres) administered by the U.S. Forest Service (Ozark National Forest). Recreational use is limited by the high skill level required to run the river, limited access, and the absence of maintained trails. River use is limited to highly skilled white-water boaters during brief periods of high water. In 1992, a 15.8 mile segment of the Buffalo River, upstream from the BNR boundary, was designated as part of the National Wild and Scenic River System. The USFS Upper Buffalo Wilderness Area is a Class 1 airshed in accordance with the Clean Air Act of 1977.

Significant resource concerns include the presence of feral swine on the adjacent USFS Wilderness lands.

Goal: Manage the unit so as to preserve the area's natural conditions, primeval character, and outstanding opportunities for solitude.

Goal: Cooperate with the U.S. Forest Service to manage the adjacent National River and National Forest wilderness lands as a unified wilderness area.

The **Ponca Wilderness Unit** has the most recreational use of any wilderness area in Arkansas. Access is facilitated by paved highways on its perimeter, by an extensive trail system and by high levels of seasonal river use. Total river use was estimated in 1983 at 7,700 canoes per year, 78% of which occurred in April and

May. The River Use Management Plan provides for high levels of river use for the Steel Creek-to-Kyles river segment. The RUMP sets an upper limit for this section of 494 boats per day on **weekends** and 206 boats per day on weekdays. While informal counts of over 600 boats a day have been reported, surveys in May 1993, recorded a maximum of 464 boats per day. The average for Saturdays in May was 389 boats per day.

There are 30.2 miles of designated hiking and horseback riding trails and five major trailheads in the Ponca Unit. The concentration of floaters, hikers and horseback riders from six separate trails in the vicinity of Horseshoe Bend and **Hemmed-in-Hollow** creates congested conditions during peak use days in the spring. An estimated 90% of visitors to this area are day users.

The discovery, in 1992, of an infestation of exotic gypsy moths on private land immediately north of this unit poses an immediate environmental threat for the area. Forest defoliation by the moth and the impact of eradication efforts on nontarget species are concerns.

Goal: Provide outstanding opportunities for those primitive forms of recreation which either require or are enhanced by a wilderness setting, while preserving the area's natural conditions.

The **Lower Buffalo Wilderness Unit** encircles the lower river and adjoins the USFS Leatherwood Wilderness Area (16,956 acres). The combined 39,456 acres of the Lower Buffalo and Leatherwood Wilderness Areas creates the largest area of designated wilderness in the Ozark.-Ouachita Highlands. This area is also unique regionally in providing multi-day river trips within a wilderness setting. Annual river use from Buffalo Point to Rush (**7.5** miles) is estimated at 9,500 boats per year. The 24-mile segment of river from Rush to the White River has lower use (estimated 2,700 boats per year). The river channel is not included in this wilderness unit to allow for continued use of motorized boats (ten horsepower maximum limit). **Floating**, fishing, horseback riding and hunting are the primary recreational activities. It is **estimated** that most floaters on this segment camp at least one night between Rush and **the** White River.

Abandoned roads form an extensive network of unmaintained and unmarked primitive routes used by horses and hikers.

The area also has numerous traditional hunting camps established during deer and turkey season. Some camps are accessed by boat and other by pack horse. Fishing is a popular activity, particularly with motorized boaters. The last 2-3 miles of the Buffalo is used extensively **by** anglers who motor up from the White River to

fish for smallmouth bass.

Recently established populations of feral swine on both the Leatherwood and Lower Buffalo Wilderness Areas posed a significant environmental threat.

Goal: Provide outstanding opportunities for wilderness camping and river trips.

Goal: Cooperate with the **U.S.** Forest Service to manage the adjacent National River and National Forest wilderness lands as a unified wilderness area.

Wilderness Fire Management: Wildfires, whether ignited by lightning or humans, have had a significant effect on some of the Ozark's vegetative communities. Historically, approximately 98 percent of fires in the Buffalo River area are man-caused; only two percent are non-human ignitions. Organized wildland fire suppression efforts begun in the mid-20th century may have led to changes in the species composition and structure of some communities. Comprehensive studies of the fire history of these areas may indicate the need to utilize prescribed fire to maintain or restore native plant communities. Due to the relatively small size of all three wilderness units and the extent of development on their boundaries, all wildfires, regardless of cause, will be suppressed by confinement or containment strategies.

All suppression activities will be planned and implemented in accordance with the "minimum tool" principle so as to cause the least amount of environmental impact (see next section). Fireline constructed during suppression efforts will be rehabilitated.

Details of fire suppression and prescribed fire programs at Buffalo National River are contained in the Buffalo National River Fire Management Plan (1988).

Use of Motorized Equipment and Mechanical Transportation

*"The manager should use the minimum tool, equipment or structure necessary to successfully, safely and economically accomplish the objective. When establishing the minimum tool and equipment necessary for a management need within wilderness areas economic factors should be considered the least important: of the three criteria. The chosen tool or equipment should be the one that least degrades wilderness values, temporarily or permanently."*

*"In special or emergency cases involving the health and safety of wilderness users or protection of wilderness values aircraft, motorboats and motorized vehicles may be used."*

Department of the Interior  
Secretarial Order No. 2920

Administrative Use: In accordance with Department guidelines (Secretarial Order No. 2920) all management actions within wilderness will be governed by the "minimum tool" principle. Motorized equipment or mechanized transportation may be used in wilderness for fire, medical, searches and other life threatening emergencies. In emergency situations the designated Incident Commander has the authority to approve the use of motorized equipment. All decisions by an Incident Commander to utilize motorized equipment, mechanized transportation, or aircraft (below 2,000 feet above ground level) in wilderness for emergency operations will be documented in *Case Incident Reports* for reviewed by the Wilderness Coordinator, Chief Ranger and Superintendent.

In non-emergency situations, motorized equipment or mechanized transportation may only be used if the project is specific to wilderness management objectives and its use is determined by the Superintendent to be the minimum tool required. With the exception of boat motors in the Lower Buffalo Unit, motorized equipment and mechanized transportation will not be used for cyclic maintenance, law enforcement patrols, or other routine operations in wilderness.

All non-emergency use in wilderness of motorized equipment, mechanized transportation, or aircraft below 2,000 feet above ground level requires prior written approval by the Superintendent. The written determination will include an outline of the project, options considered, mitigation actions, and the relationship

of the project to wilderness management objectives (NPS-77, Chapter 3, page 80). Refer to the Minimum Tool Decision Document in Appendix F.

Copies of Case Incident Reports regarding emergency uses and written determinations regarding non-emergency uses will be provided to the park's wilderness coordinator as soon as available. An annual report summarizing all uses of motorized equipment and mechanized transportation during the previous year will be prepared by the wilderness coordinator and submitted to the Superintendent by January 31.

Public Use of Motorized Equipment and Mechanized Transport: The use of motor vehicles, motorized boats, bicycles, horse-drawn carts and other motorized and non-motorized mechanical forms of transportation in wilderness is prohibited by law, with the exception of manual or motorized wheelchairs (as defined by Title 36, CFR) used by disabled visitors. In wilderness, the use of motorized equipment, such as chainsaws or electrical generators, is prohibited by Superintendent's Order.

Management Facilities in Wilderness: There are currently no structures or facilities in wilderness units used for administrative purposes, nor are there any anticipated needs for such facilities in wilderness. In accordance with NPS policy, no permanent aircraft landing areas will be constructed or maintained in wilderness. Temporary landing spots may be cleared to meet the minimum requirements of emergency life threatening situations.

Permanent shelters for public use will not be constructed or maintained in wilderness. Use of existing structures for camping purposes is prohibited by Superintendent's Order.

Cemeteries in Wilderness Areas: Six cemeteries are located within the BNR Wilderness. All six are located on federal land within the Lower Unit. All are relatively small family burial sites. None have had recent (post-park establishment) interments.

Private individuals or organizations may maintain cemetery grounds or grave sites with the Superintendent's written approval. All such work will be carried out in accordance with the provisions of the Wilderness Act, NPS Management Policies, this plan, and a Letter of Authorization outlining the scope and nature of work to be done.

Persons visiting a cemetery in wilderness must do so without the use of motorized equipment or mechanized transportation. The NPS will, to the extent legally

possible, assist family members requesting to visit the grave sites of relatives buried in cemeteries within wilderness.

Wilderness River Management: The only river sections within designated wilderness extend from the western park boundary to the upper end of Boxley Valley (Upper Buffalo Unit) and **from** Steel Creek to near Kyles Landing (Ponca Unit). The Buffalo River passes through the Lower Buffalo Unit from Ingram Creek below Buffalo Point to the confluence with the White River, but the river itself is not designated as wilderness. A review of NPS planning documents (USDI Final EIS Wilderness Recommendation 1978) indicates the deletion of the river channel was done solely to allow the continued use of motorized boats. Motor use is restricted by regulation to boat motors of ten horsepower or less. The wilderness boundary along this portion of the river is recognized as the water's edge. With the exception of motorboat use, the Lower Buffalo Unit will be managed as wilderness.

Research in Wilderness: The park will seek and provide for scientific study and monitoring which improves our knowledge of wilderness ecosystems as well as the impacts of visitor use and **management** actions. Research projects may be conducted in wilderness if they meet all of the requirements outlined in NPS Management Policies (Chapter **6:6**). Such research activities will be documented in an appropriate format, either an **environmental** assessment or categorical exclusion (See Southwest Region Environmental Compliance Handbook).

BNR Wilderness Committee: A standing Wilderness/Backcountry Committee will be established. The committee **will** be composed of the park wilderness coordinator, District Rangers, a staff interpreter and trails foreman (or other Maintenance representation) and others that the Superintendent may appoint. The committee will provide a forum for discussion of wilderness and backcountry related issues and provide **recommendations** to the Superintendent.

## Section 10 - BACKCOUNTRY TRAIL SYSTEM

### Trail System Objectives:

Develop and maintain a variety of hiking and horseback trail opportunities while minimizing conflicts with other uses and resources.

Avoid sensitive, fragile, and hazardous resources such as archeological sites, wildlife nesting sites, caves, and mine openings.

Incorporate existing abandoned roads where appropriate.

Design new trails and manage existing trails to prevent soil erosion.

The 1987 Trail Plan further developed the broad trail proposals outlined in the park's Final Master Plan (U.S.D.I. 1977). The Trail Plan was conceptual and only general trail corridors are identified. These corridors included a river-long hiking trail (Buffalo River Trail), major loop and spur trails which connect with the Buffalo River Trail and horse trails following old road beds.

Backcountry Trail System Planning: Backcountry trail system development will be guided by the overall goals, objectives and policies outlined in this plan. In addition to maintenance requirements, backcountry and wilderness trail system planning will take into account current levels of trail use, types of use, conflicts between user groups, private property rights, and opportunities for solitude in wilderness.

The backcountry trail system will include two categories:

**1. Maintained Trails** - Trails built and maintained by the NPS. Maintenance will include appropriate clearing, tread work, erosion control, and signing or marking. Maintenance will be conducted by NPS employees and volunteers directed by the NPS. An inventory of existing backcountry trails is found in Appendix C. Trail standards for maintained trails are included in Appendix E.

**2. Primitive Routes** - Primitive routes are traditional routes, designated by the NPS in Special Horse Use Zones (See Section 15), which are used by horseback riders and hikers (generally following abandoned roads or trails). Primitive routes will not be maintained by the NPS nor will the NPS direct volunteer maintenance. Primitive routes will not be signed and markings will be limited to areas requiring delineation to prevent resource impacts. Users of primitive routes will be permitted to clear downed trees and vegetation on designated routes according to standards outlined in Appendix E.

Primitive routes are appropriate for low use levels by experienced users familiar with the area. Once designated, routes will be indicated on maps available to users. The primitive route system will be flexible in **accommodating** additional routes suggested by the public, relocation of routes, or even elimination. Unless an emergency situation exists, the NPS will consult with interested user groups before any routes are closed or significantly rerouted.

Decisions not to designate a route, or to modify or eliminate a route will be based upon: 1) Known or easily predicted resource impacts; 2) Conflict with private property; 3) Significant health or safety hazards.

### Proposed Additions to the Maintained Backcountry Trail System

In addition to the existing backcountry trails listed in Appendix C, the following trails are proposed by this plan:

**1. Ozark Highroads Trail (OHT) Extension** - The OHT will be extended from its current terminus at Highway 65 to the Sylamore District of the Ozark National Forest. The OHT would be developed as a trail for hikers (stock use would be prohibited). The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement. A major objective is to select a route which minimizes new trail mileage through the Lower Buffalo Wilderness Unit.

**2. Erbie to Carver Horse Trail** - A **maintained trail** for horses would be developed from Erbie to Carver. The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement. A major objective identified by this plan will be to select a route which utilizes existing abandoned roads and avoids river crossings whenever possible. The route being utilized by horseback riders will be considered a primitive route until a final maintained trail is completed.

**3. Reroute of Horse Trail between Woolum and Tyler Bend** - A reroute of horses from those sections of the Buffalo River Trail which are too narrow and steep for stock use will be developed. The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement.

These trail system additions will be developed in segments working from west to east. Actual trail development will be pending available funds, completion of existing trail maintenance needs, and volunteer efforts. An environmental assessment will be completed for all new trails before any construction begins. New backcountry trails (maintained) will be limited to those listed above.

#### Trail Use Monitoring:

--**Electronic** trail counters to obtain monthly estimates of use on major trails.

--Trail registers or user survey cards to obtain data on group size, type of use (hiking, stock or bicycle), percentage of day users, percentage and duration of overnight stays, entry and exit points, number of user conflicts and other information needed by park managers to plan for and, where possible, address visitor needs.

Trail Maintenance Standards: Standards for trail design and maintenance will, wherever practical, follow guidelines set forth in the Appendix E and the NPS Trails Management Handbook (1983).

Volunteer Trail Maintenance: District Rangers will implement an “Adopt-a-Trail” program to encourage volunteer efforts to assist in maintaining trails in their districts.

#### **Backcountry Trail Signing and Marking**

Goal: Provide trail signing at a level consistent with management zone designation of the area.

Backcountry Sign Policy: Management zone designation will determine the appropriate sign standards for an area. The intent is to minimize the number of signs needed within the backcountry by; 1) installing informational trailhead signs, and 2) producing high quality maps and information to visitors before they enter backcountry areas. Trailheads will **provide** informational material regarding appropriate “Leave-No-Trace” practices, as well as trail direction and distance information, and appropriate safety messages.

**Use of Signs in Wilderness:** *“Signs detract from the wilderness character of an area and make the imprint of man and management more noticeable. Only those signs necessary to protect wilderness resources or for public safety, such as signs identifying trails and distances,, will be permitted”* (NPS Mgmt. Policies, Chapter

**6:6).** Only those signs necessary for wilderness resource protection or public safety will be provided. Signs required for visitor safety will be used if a clear and present danger exists. "Danger" in this context is a condition or situation above and beyond hazards which are inherent to wilderness.

At points where trails enter wilderness, the boundary will be marked to inform the public of the area's status. Locations where the public is likely to enter the wilderness via abandoned roads (including primitive routes) should be posted with Carsonite (TM) posts (or an equivalent) with an appropriate message (*WILDERNESS BOUNDARY, Motorized Equipment and Mechanical Transportation PROHIBITED, National Park Service, Buffalo National River*). On designated trails, routed wood signs or trailhead signs will be used.

In wilderness areas:

- ☞ signs will not be used to identify or interpret natural or cultural features;
- ☞ may be used to identify closures and restoration sites when necessary to prevent further degradation of natural or cultural resources;
- ☞ signs will not be placed in **areas** designated Zone 1, except with a written determination of need by the Superintendent.

### Trail Markings and Directional Indicators

Markings to indicate trail direction may be required where the trail route is difficult to discern. Examples include a little used trail that passes through a large, overgrown field or a trail that crosses a large gravel bar. Trail markings and directional indicators will be used only in locations where designated trails are difficult to discern. On primitive routes, markers or blazes will be limited to those required to prevent resource damage from the creation of multiple routes.

The marking technique will depend on its effectiveness and the availability of materials in a given situation. The following guideline is provided to ensure consistent trail markings throughout the trail system.

1. Forested Areas: Color blaze markings on trees (**2" X 5"**). White blazes on hiking trails and yellow on horse trails. The blaze can be canted (**45°**) to the left or right to indicate abrupt changes in trail direction or the intersection with another trail.
2. Open Areas: a) Rock cairns or; b) if rock cairns are impractical or ineffective,

3-4 inch diameter wooden posts may be used to mark the trail. A 2" X 5" painted rectangle will be used to indicate direction.

#### Maintenance Division Backcountry Sign Responsibilities

The Maintenance Division is responsible for the maintenance of backcountry signs. Specific responsibilities of the Maintenance Division include:

- Maintaining a sign inventory including, at a minimum, location, size, wording and composition of all trailhead and backcountry signs.
- Requisitioning materials as needed for new signs and for existing signs in need of replacement.
- Constructing all trailhead and backcountry signs.
- Installing all trailhead signs and signs located along the roadside which relate to trails.

#### Ranger Division Responsibilities

Responsibilities of the Ranger Division include:

- Assist the Maintenance Division with sign inventory.
- Initiate sign requests consistent with this plan.
- Installing and maintaining all backcountry signs.

## Section 11 - ENDANGERED SPECIES

### Threatened and Endangered Plants:

No plant species listed by the U.S. Fish and Wildlife Service (USF&WS) as endangered or threatened have been documented in Buffalo National River. A list of species currently classified as Category 1 or 2 which occur or could potentially occur in Buffalo National River is maintained by the Resource Management Office. A botanical assessment will be conducted before any management action is taken that could adversely impact any of these listed species.

### Threatened and Endangered Animals:

The Indiana bat, gray bat, Ozark big-eared bat and bald eagle have been documented within Buffalo National River and are listed as endangered by the U.S. Fish and Wildlife Service.

Indiana bats (*Myotis sodalis*) hibernate in caves within the park. Gray bats (*Myotis grisescens*) use caves in the park for both winter hibernacula and summer maternity colonies. Individual Ozark big-eared bats (*Plecotus townsendii* *agens*) have been found in two caves. Several important bat caves are located within wilderness units.

Horseshoe Cave is located in the Ponca Wilderness Unit. This cave is utilized by gray bats in the summer and is closed by Superintendent's Order from May 15 to October 15. Recent surveys indicate Indiana and gray bats also using this cave as a hibernaculum. Even though no maintained trail exists, the two entrances to the cave provide the most direct route for hikers to get around an impassable portion of this popular scenic area. The entrances are not gated or fenced but a sign explaining the closure is maintained at each entrance. Public use in the area is being monitored.

The only cave with a gray bat maternity colony within Buffalo National River and is located in the Lower Buffalo Wilderness Unit. The entrance is located near the river but it is generally not visible from the river during the summer. The entrance is not fenced or gated but a sign, explaining the closure, is maintained.

Cave management and the protection of Indiana, Ozark big-eared and gray bats are addressed in the park's Cave Management Plan and recovery plans for each species. The policy at Buffalo National River will be:

--that trails should not be constructed within 500 feet of any cave used by

species of bats which are listed as endangered, threatened or category 1 or 2. If there is no alternative route, consultation with the U.S. Fish and Wildlife Service will be **completed** before any construction begins.

The bald eagle (Haliaeetus leucocephalus) is a common winter resident. The golden eagle (Aquila chrysaetos) is an infrequent winter resident. The highest concentration of eagles are found within the Lower Buffalo Wilderness. No eagles have nested within the National River or vicinity in recent history. The Florida panther (Felis concolor corvi) has not been documented within Arkansas in recent years but suitable habitat does exist.

Animal species which are candidate species for federal listing or which are ranked by the Arkansas Natural Heritage Commission are kept on file by the Resource Management office.

Endangered Species Consultation: In accordance with Section 7 (a)(2) of the Endangered Species Act, the NPS will consult with the U.S. Fish and Wildlife Service before initiating any actions in an area where a proposed or listed species or its habitat occurs or has the potential to occur in the action area. Detailed consultation procedures are outlined in the Southwestern Region Environmental Compliance Handbook.

## **Section 12 - BACKCOUNTRY CAMPING**

Backcountry camping is allowed throughout Buffalo National River without permits.

Regulations:

--Except for gravel bars on the Buffalo River, camping is not permitted within **100** feet of a flowing stream, **river** or body of water.

--Installation of permanent camping facilities by the public is prohibited. Equipment may not be left **unattended** for more than 24 hours.

--Camping is limited to a **total** of 30 days in a calendar year.

--Except for designated sites at developed campgrounds, camping is prohibited within **1/2** mile of developed areas.

--Unless otherwise indicated, campfires are permitted in all areas of the backcountry. Only dead and down material may be collected for firewood. Open fires may be prohibited during periods of extreme fire danger or in

specific areas.

--Camping is prohibited in Lost Valley (except in designated campground), and from Hemmed-in-Hollow falls downstream to the first trail intersection and on Big Bluff ("the Goat Trail").

--Historic districts/zones, hay fields under agricultural Special Use Permits, Use and Occupancy Reservations, private lands and all structures are closed to camping. A list of current closures is contained in the *Compendium of Superintendent's Orders* (revised annually).

Backcountry camping permits are not required for backcountry campers. Permits may be considered for specific areas or seasons if other management actions to achieve established standards fail.

#### Recommended Group Sizes for Backcountry Camping

In Zone 1 areas, the recommended group size limit is 6 persons for overnight use. In Zone 2 areas, the recommended group size limit is 12 for overnight use. In Zone 3 or 4 areas, the recommended group size is 25 for overnight use. The use of portable toilet systems by boating or vehicle parties of 12 or more persons is strongly recommended.

#### Designated Backcountry Campsites

Numerous studies (Cole, 1989) indicate most campsite impacts occur during the first few nights of use. It is therefore preferable to concentrate use on a few sites rather than disperse use to a large number of different sites.

Designated backcountry campsites may be established in Zones 2, 3 or 4 to help limit impacts to appropriate sites or limit the creation of numerous new sites in a heavy use area. Appropriate backcountry campsites may also be designated for parties using stock. Designated sites would be recommended, indicated on hand-out maps and available on a first come, first serve basis.

Limiting camping to designated sites may be required in popular areas where existing sites are located in sensitive sites or sites are numerous and coalescing into large disturbed areas. Such restrictions are unlikely for traditional gravel bar camping.

Recommended "Leave No Trace" backcountry practices for backpacking, stock parties, and floaters are listed in Appendix H.

### **Section 13 - INFORMATION, EDUCATION and INTERPRETATION**

Goal: Provide information to ensure the successful adaptation of visitors to park environments and to encourage appropriate, safe, minimum impact use of park resources.

#### Management Objectives:

--Utilize park information centers, the park newspaper, interpretive brochures, the news media, trailhead signing and uniformed park employees to convey "No Trace" information to backcountry visitors.

Every effort should be made to interpret wilderness values to National River visitors and neighbors. Public understanding is essential to achieve respect for the resources, restraint, and a willingness to adhere to appropriate uses. Such public understanding and voluntary compliance provide the desirable alternative to imposition of restrictions and regulations.

### **Section 14 - SANITATION AND HEALTH**

Vault toilets are provided at all developed river access points and campgrounds. In the absence of toilets, backcountry visitors must bury feces in "catholes", which are holes six to eight inches in depth, 100 feet from water sources, campsites, roads and trails. Feminine hygiene products and disposable diapers must be packed out. Unfortunately, many backcountry visitors are failing to follow these procedures resulting in high densities of human waste and toilet paper scattered around high use areas. Effective interpretive messages and programs must be developed to educate and motivate visitors to use recommended human waste practices.

In frequently used backcountry campsites or popular day-use destinations, available "cathole" locations often become used up during peak use seasons. High use levels may necessitate the installation and maintenance of backcountry toilets in some popular backcountry areas. Many such sites are inaccessible and will require use of toilet systems which do not require servicing by vehicle.

Consideration will also be given to use of portable toilets systems by river users. New portable systems conforming to Environmental Protection Agency (EPA) standards are already required on some rivers. EPA requires that human waste be deposited in facilities which process sewage rather than landfills.

## Section 15 - STOCK USE

### Objectives:

- Provide opportunities for horseback riding in a wilderness/backcountry setting on trails and routes which can accommodate such use without unacceptable resource impact.
  
- Provide appropriate vehicle accessible, camping areas for groups with stock.
  
- A stock-use brochure describing minimum impact stock use techniques will be developed specifically for Buffalo National River.

Horseback riding in the backcountry and wilderness areas of Buffalo National River is a popular recreational use. Within areas designated as **Special Horse Use Zones**, stock use will be restricted to designated horse trails, primitive routes and the non-travelled portion of roads open to motor vehicles. Special Horse Use Zones will be established in areas where designated horse trails are maintained. In larger areas where no designated horse trails are maintained horses may be used on abandoned roads, gravel bars, and old traces.

### Special Horse Use Zones;

- ✧ All areas from the northern boundaries of the Upper Buffalo Wilderness Unit (southern end of Boxley Valley) east to Highway 7.
  
- ✧ All areas in the Lower Buffalo Wilderness Unit within ¼ mile of the Cook Hollow/Cow Creek Trail and the entire area encircled by the trail.

As additional horse trails are developed, additional Special Horse Use Zones may be established in those areas. Maintained trails currently designated for stock use are listed in Appendix C.

### **Recommended Group Size for Stock Groups Camping in Backcountry Sites**

In Zone 1, maximum recommended group size for stock parties camping in backcountry sites is a combination of 8 persons and stock (Example; 4 persons and 4 horses). In Zone 2, stock parties should be limited to a combination of **12** persons and stock. In Zone 3 and 4, stock parties should be limited to a combination of 24 persons and stock. These recommendations are voluntary guidelines.

Stock may not be left unattended unless tethered to a hitch rail, picket line or tether. Stock may not be tied to trees. The use of temporary hitch lines are recommended for backcountry camps. Stock are not allowed to graze in maintained hay fields.

#### Frontcountry Horse Camps:

A frontcountry horse camp is defined as a designated campsite provided exclusively for stock groups and accessible to motor vehicles and horse trailers. These camps are not considered backcountry campsites.

Currently, designated frontcountry horse camps are located at Steel Creek, Erbie and Woolum. Additional sites will be considered near Pruitt and Carver once stock trails are completed in those areas. Criteria for the establishment of additional frontcountry horse camps include:

- Availability of an adequate water source for stock.
- Accessibility to trails open to stock use.
- Previously disturbed sites, such as agricultural fields, will be selected whenever available.

Site capacities, in terms of both number of stock and number of people, and regulations for horse camps are established by the Superintendent. Use of these camps by larger groups will require prior approval of the Superintendent through a special use permit.

#### Commercial Horse Use

Commercial services are discussed Section 18. Commercial horse operations will be govern by the laws, regulations and policies described in that section and the provisions described here. All commercial horse operations will be authorized with concession contracts rather than commercial use licenses.

Commercial horse trail ride operations are considered an appropriate visitor service for certain areas of the National River. The location and type of commercial horse use will be determined by the NPS based upon the **necessary** and appropriate criteria of the Concessions Policy Act. Locations proposed by adjacent property owners, to facilitate a commercial enterprise, may not meet these criteria, be needed by the public nor be compatible with area resources.

Commercial horse operations will be limited to designated horse trails. They will not be authorized in designated wilderness areas.

## **Section 16 - SPECIAL ISSUES**

Hunting and Hunting Dogs: Hunting is permitted in Buffalo National River in accordance with the regulations of the Arkansas Game and Fish Commission. These regulations allow the use of dogs when used to hunt in accordance with Commission regulations. Hunting dogs are not permitted for deer, bear, or coyote hunting.

Motor Vehicle Use: Motor vehicles are permitted only on those roads identified as public roads in the Buffalo National River Road System Evaluation Plan. Roadways not designated in this plan are closed to motor vehicle use. Off-road travel by motor vehicles is prohibited throughout the National River. All motor vehicles must have a valid state vehicle registration. All roads, lands and waters within Buffalo National River are closed to the operation of all-terrain three and four wheel vehicles or similar vehicles intended for off-road use.

Bicycles: Bicycles are permitted on all roads **open to motor vehicles**(See previous section). Bicycles are prohibited on all other trails, routes and areas unless otherwise designated by the Superintendent (36 CFR **4.30a**). Possessing a bicycle in a wilderness area is prohibited (36 CFR **4.30(d)(1)**).

## **Section 17 - CULTURAL RESOURCES**

The backcountry areas of Buffalo National River, including its wilderness areas, still bear ample evidence of human occupation and use during historic and pre-historic periods. Abandoned roads, buildings, fences, and mines, are widely scattered throughout the backcountry. A systematic Cultural Site Inventory and Cultural Landscape Survey under current National Register criteria is incomplete. Several backcountry and wilderness structures, including cemeteries, are currently listed on the NPS List of Classified Structures.

A Memorandum of Agreement (**MOA**) between the Department of the Interior and the Advisory Council on Historic Preservation (**USDI 1978**) was signed in 1975. The MOA lists steps to be taken to locate and protect cultural resources at Buffalo National River which would be affected by implementation of the BNR Master Plan and Wilderness Recommendation are adequately mitigated. Properties eligible for the National Register are to be preserved: historic structures will be maintained; archeological sites are to be left untouched except for selective excavation. The NPS will consult with the State Preservation Officer and the Advisory Council on

any action which has the potential to adversely affect cultural resources.

**Historic Structures:** Numerous structures including buildings, ruins, roads, fence lines, and mines exist within the National River's wilderness area. One structure, the WPA era Cold Springs School in the Lower Unit, is listed on the National Register of Historic Places (listed **10/29/93**). The Pickle Edgmon barn in the Upper Unit is a contributing structure to the Boxley Historic District.

Preservation maintenance will continue on resources listed or eligible for listing on the National Register. Once a resource is determined to be ineligible, all maintenance will cease. Other structures located within wilderness will not be maintained.

**Archeological Sites:** The National Park Service maintains an inventory of archeological sites within the park. Backcountry facilities, such as trails or campsites, will only be constructed after a cultural resource inventory and assessment have determined that the facility will not impact significant sites.

## **Section 18 - COMMERCIAL SERVICES**

Commercial services includes guided trips or services which collect a fee in excess of the actual personal costs of the trip and/or for payment of other than actual personal trip expenses for guides or leaders. This includes nonprofit organizations providing a livelihood for people through provision of these services.

Commercial activities are limited to those necessary for visitor's use and enjoyment which will not impair the park's resources (NPS Management Policies, Chap. 10:3). Commercial operations are usually authorized by either a concessions contract or a commercial use license. Concessions are subject to provisions of the Concessions Policy Act of 1965, NPS regulations (36 CFR 51) and the NPS Concessions Management Guideline (NPS-48). Concessions are generally granted to a limited number of operators for a particular activity. A commercial use license (CUL) is used to authorized commercial activities which are initiated and terminated outside of the park boundaries. CULs are limited to two year terms.

The Concession Policy Act of 1965 states,

*"... the Congress hereby finds that the preservation of park values requires that public accommodations, facilities and services as have to be provided within these areas should be provided only under carefully controlled safeguards against unregulated and indiscriminate use, so that the heavy visitation will not unduly impair these values and so that development of such facilities can best be limited to locations where the least damage to*

*park values will be caused "*

Commercial use of the backcountry may be authorized by the Superintendent if such use meets the "necessary and appropriate" tests of the 1965 Concessions Policy Act and is consistent with the objectives stated in Buffalo National River's approved planning documents. For the purpose of carrying out the Concessions Policy Act, the following definitions apply:

**Necessary** - required to meet the needs of the visitor/public.

**Appropriate - compatible** with the park's natural, cultural, and/or recreational resource(s), recognizing the purpose of the established area. (U.S.D.I. Concessions Management Guideline, 1986).

**CULs** will include specific limits on group size, operational routes, health and safety requirements, and designated camping (if any) and rest areas. Proposed **CULs** will be evaluated based upon criteria related to suitability of the trail and potential conflicts with other uses.

The National Park Service authorizes 25 canoe or johnboat rental operations under concession contracts to operate in backcountry areas of Buffalo National River (See Section 3, River Uses). There are no current **CULs**.

## Section 19 - SUMMARY OF NEEDS

Many of the **activities** identified within this plan are already incorporated into existing operations at Buffalo National River. To implement other activities will require either additional staff resources or reprogramming of existing staff responsibilities.

### Monitorina Proarams

**River Use Survey** - Standards related to river use require the monitoring of the number of boats using individual river segments. Currently, river use numbers are only available for each District (Upper, Middle, and Lower). A monitoring system for each river segment would rely principally upon tallies of receipts from canoe concessions along with periodic actual river counts to verify the percent of total use in private boats. Concession receipts contain information on dates, number of boats, and the segment of the river floated. For the information to be useful it must be entered into a computer data-base. Once entered reports could be genetrated for compliance with the standards for river use, monthly public use reports, and concession specialist reports. Data entry would be the most expensive

part of this monitoring program.

Trail Use Survey - The trail standard dealing with the number of encounters per day will require the initiation of a monitoring program. This monitoring program would rely upon electronic trail counters, trailhead registers, and periodic counts of actual trail use. These would be used to develop an estimate of the number of encounters likely on a given trail with a given number of people using it per day.

Trail Counters - Electronic trail counters would be located near major trailheads. Counters would provide both daily and monthly estimates of use which can be compared to trail register results and periodic verification counts.

Trail Registers - Trail registers will be placed at major trailheads. Registration cards will provide information on trail use including dates, overnight use, destinations, groups sizes, and feedback from users regarding problems. These trail use number can be compared to trail counter readings to verify amount and timing of use.

River Litter Survey - Development and implementation of a monitoring program to determine the amount of litter along the river. In order to develop a quantitative index of river litter from recreational use, beverage containers will be collected and counted on sample segments of the river.

Backcountry Sign Inventory - Develop a complete inventory of all backcountry signs. Assigned through District Maintenance Supervisors, each district should complete and maintain an inventory of the location, wording, and type of backcountry sign in their area.

Increased Backcountry Patrols - Due to staffing limitations and an emphasis on providing law enforcement coverage to developed areas (i.e. campgrounds) in evening hours, backcountry patrols during peak use periods are currently insufficient. More contacts with backcountry visitors are needed to provide safety and "no trace" backcountry information. This function can either be accomplished through realignment of existing positions (leaving law enforcement problems in developed areas unaddressed) or establishment of additional seasonal positions dedicated to backcountry patrol work.

"No Trace" Camoina Education Program - An aggressive and coordinated program to educate and motivate backcountry users in "no trace" practices is needed. Many backcountry visitors still practice high impact camping techniques, such as cutting live vegetation for tent poles, building fire rings, and burying or burning trash. The

design and implementation of this program should involve a team approach with staff from Interpretation, Resource Management, and field patrol Rangers.

Trail Maintenance Crew - An extensive trail system already exists and regardless of the alternative selected, trail maintenance needs will increase. Currently trail maintenance is entirely reactive and is carried out on a collateral basis by seasonal fire crews, volunteers, or patrol Rangers.

Acquisition of Nonfederal Interests within Wilderness Areas - Several forms of nonfederal property interests still exist within the Buffalo National River Wilderness Area. These include fixed term Use and Occupancy Reservations, private ownership (see Section 9 regarding Camp Orr), subsurface mineral interests, and road easements. The Committee Report (No. 12536) from the U.S. House of Representatives directed the NPS to acquire all nonfederal interests within the wilderness boundaries with the exception of one tract belonging to the Boy Scouts of America at Camp Orr. The Lands Division of the Southwest Regional Office has been actively identifying and acquiring mineral interests. Additional efforts are required to ensure that all such interested are identified and acquired,

## Section 20 - ASSIGNMENT OF RESPONSIBILITIES

Resource Management: The Resource Management Division is responsible for the following:

- Developing and implementing a system for the monitoring of trail and campsite conditions.
- Developing a monitoring system for the indicators described in Section 6.
- Providing technical guidance with regard to all resource monitoring conducted in backcountry and wilderness areas.
- Developing a data base management program for storing and accessing data from the monitoring system.
- Preparing annual reports summarizing backcountry and wilderness program activities and all uses of motorized equipment and mechanized transport in wilderness areas. Preparing, with the assistance of District Rangers, annual work plans which outline backcountry management projects for the coming year.
- Making recommendations to the Superintendent with regard to appropriate

backcountry and wilderness management actions.

District Rangers: District Rangers are responsible for ensuring that the following activities are carried out in their respective districts:

--Day to day management of wilderness and backcountry areas through patrols, campsite rehabilitation, oversight of commercial use, etc. as provided in this plan.

--Maintaining a updated backcountry sign inventory. Request replacements for missing or damaged signs from Maintenance.

--Enforcing rules and regulations throughout the backcountry and wilderness areas.

--Providing information and training on "No Trace" techniques to concession employees and the public.

Maintenance Division: Maintenance Foremen are responsible for ensuring that the following activities are carried out in their respective districts.

--Performing trail maintenance and coordinating trail projects that are carried out by NPS employees, Youth Conservation Corp crews and volunteer groups.

--Constructing and installing trail signs and roadside signs related to trails.

Interpretive Division: The Chief of the Interpretive Division is responsible for the following:

--Developing interpretive brochures and programs encouraging minimum impact backcountry use techniques for Buffalo National River.

--Ensuring backcountry use messages are included in interpretive talks, the park newspaper and off-site programs.

--Developing, as an integral part of the Interpretive Prospectus, a comprehensive interpretive program which communicates the significance of wilderness and provides the public with information concerning the use and enjoyment of wilderness.

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## APPENDIX A

### **National Parks and Recreation Act of 1978, Public Law 95-625 (11/10/78).**

A Summary of those portions of the Act related to wilderness designation at Buffalo National River.

#### **Title IV - Wilderness**

##### **Sec. 401 - Designation of Areas**

*The following lands are hereby designated as wilderness in accordance with section 3(c) of the Wilderness Act (78 Stat. 890: 16 USC 1132(c)), and shall be administered by the Secretary in accordance with the applicable provisions of the Wilderness Act:*

*(1) Buffalo National River, Arkansas, wilderness comprising approximately ten thousand five hundred and twenty-nine acres and potential wilderness additions comprising approximately twenty-five thousand four hundred and seventy-one acres depicted on a map entitled "Wilderness Plan, Buffalo National River, Arkansas" numbered 173 20,036-B and dated March 7, 1975, to be known as the Buffalo National River Wilderness.*

##### **Sec. 402 - Map and Description**

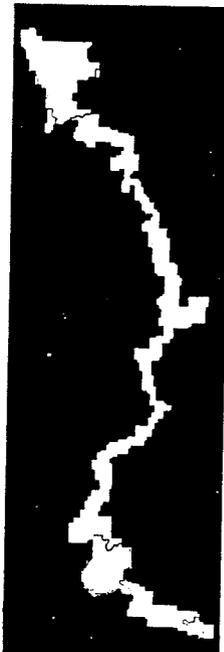
*A map and description of the boundaries of the areas designated in this title shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the Office of the Superintendent of each area designated in this title. As soon as practicable after this Act takes effect, maps of the wilderness areas and description of their boundaries shall be filed with the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, and such maps and descriptions shall have the same force and effect as if included in this Act: Provided, That correction of clerical and typographical errors in such maps and descriptions may be made.*

##### **Sec. 403 - Cessation of Certain Uses**

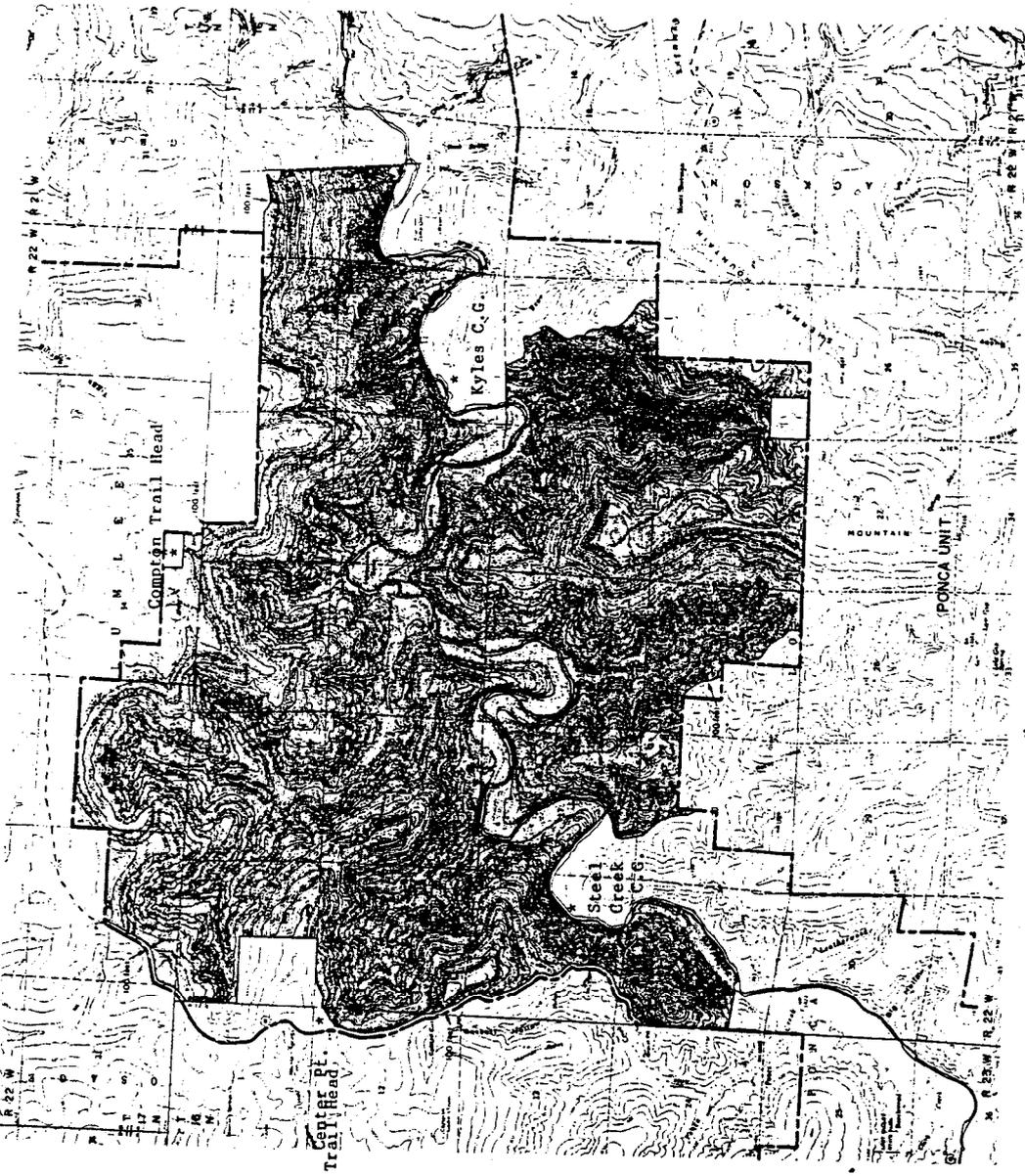
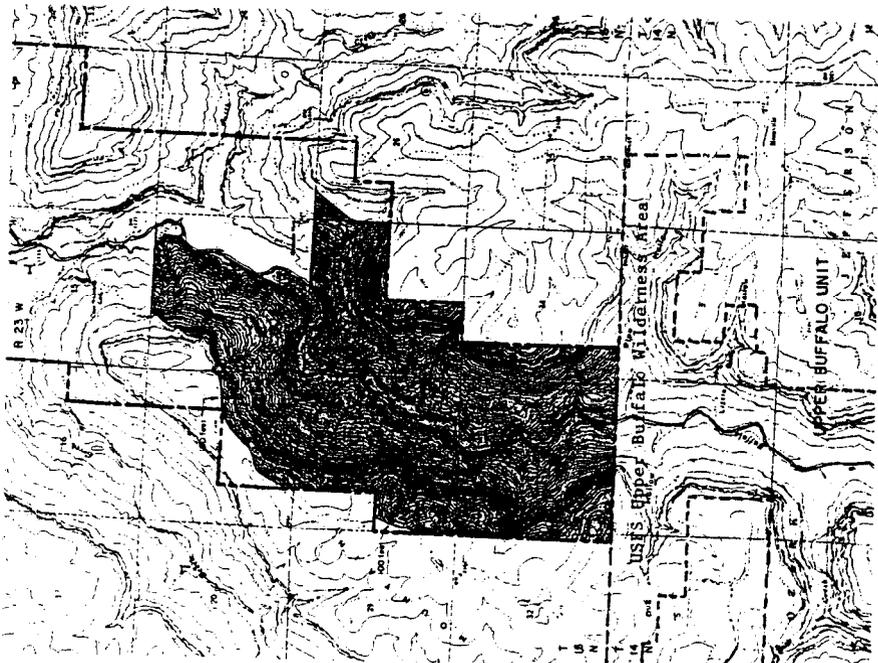
*Any lands which represent potential wilderness additions in this title, upon publication in the Federal Register of a notice by the Secretary that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness. Lands designated as potential wilderness additions shall be managed by the Secretary insofar as practicable as wilderness until such time as said lands are designated wilderness.*

##### **Sec. 404 - Administration**

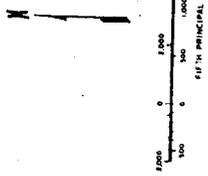
*The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.*



SEGMENT INDEX



- NATIONAL RIVER BOUNDARY
- ▨ WILDERNESS AND POTENTIAL WILDERNESS ADDITION
- NONWILDERNESS



**BUFFALO NATIONAL RIVER WILDERNESS**  
 AS DESIGNATED BY PUBLIC LAW 95-625 DATED NOVEMBER 10, 1978

BUFFALO NATIONAL RIVER

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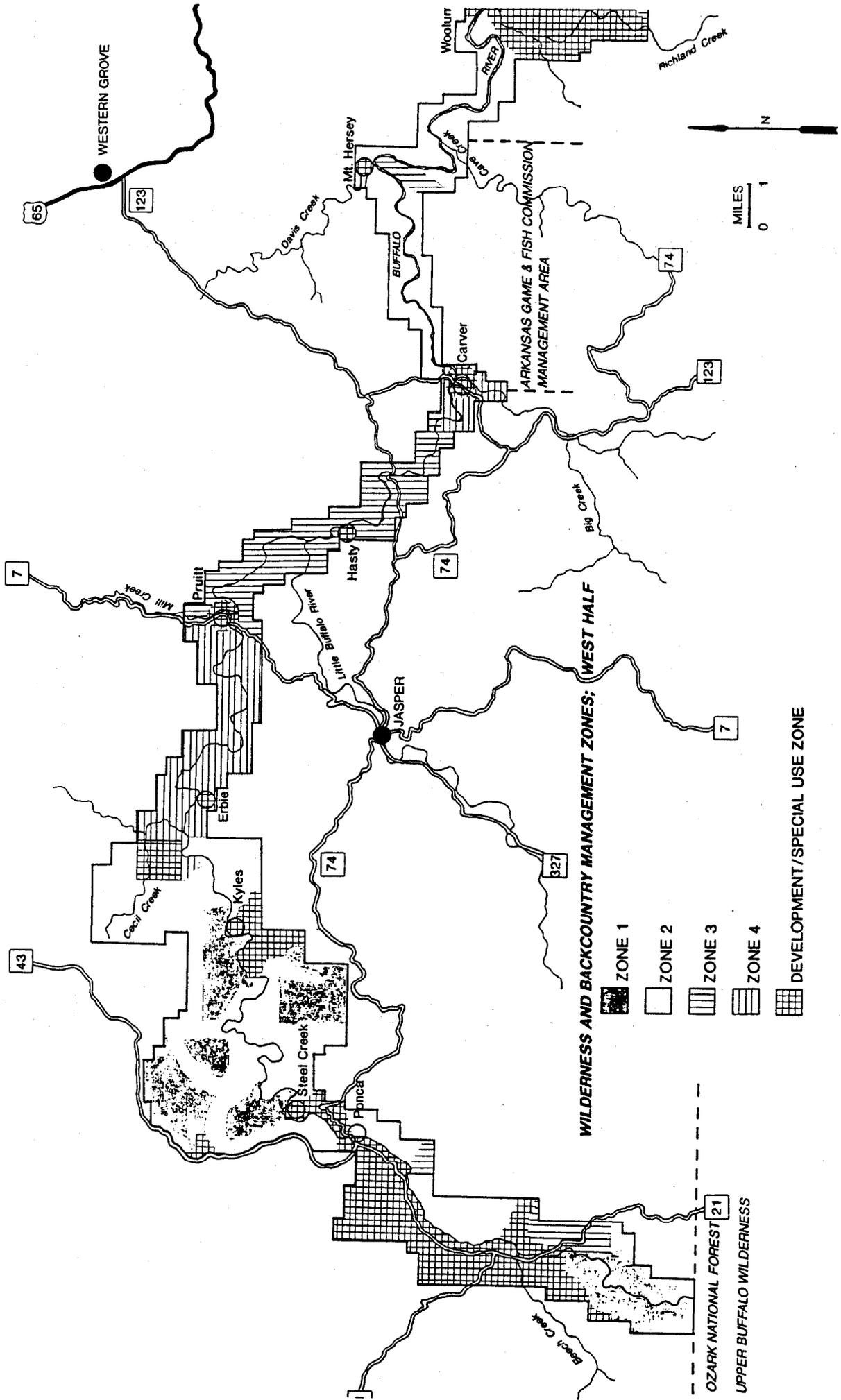


## APPENDIX c

### Buffalo National River Backcountry Trail System Inventory; 7/94

Trail Name	District	Mileage	Horse Use?	Wilderness?
Buffalo River	Upper	36.8	No	7.4 miles
Old River	Upper	13.2	Yes	5.7 miles
Center Point	Upper	3.6	Yes	All
Sneed's Creek	Upper	4.1	Yes	All
Hemmed-in-Hollow	Upper	3.5	No	All
Horseshoe Bend	Upper	1.5	No	All
Farmer	Upper	1.0	Yes	None
Cecil Cove	Upper	5.3	Yes	None
Bench	Upper	4.4	Yes	All
Point Peter Bench	Middle	2.9	Yes	None
Buffalo River	Middle	7.6	Yes	None
Cow Creek	Lower	10.5	Yes	All

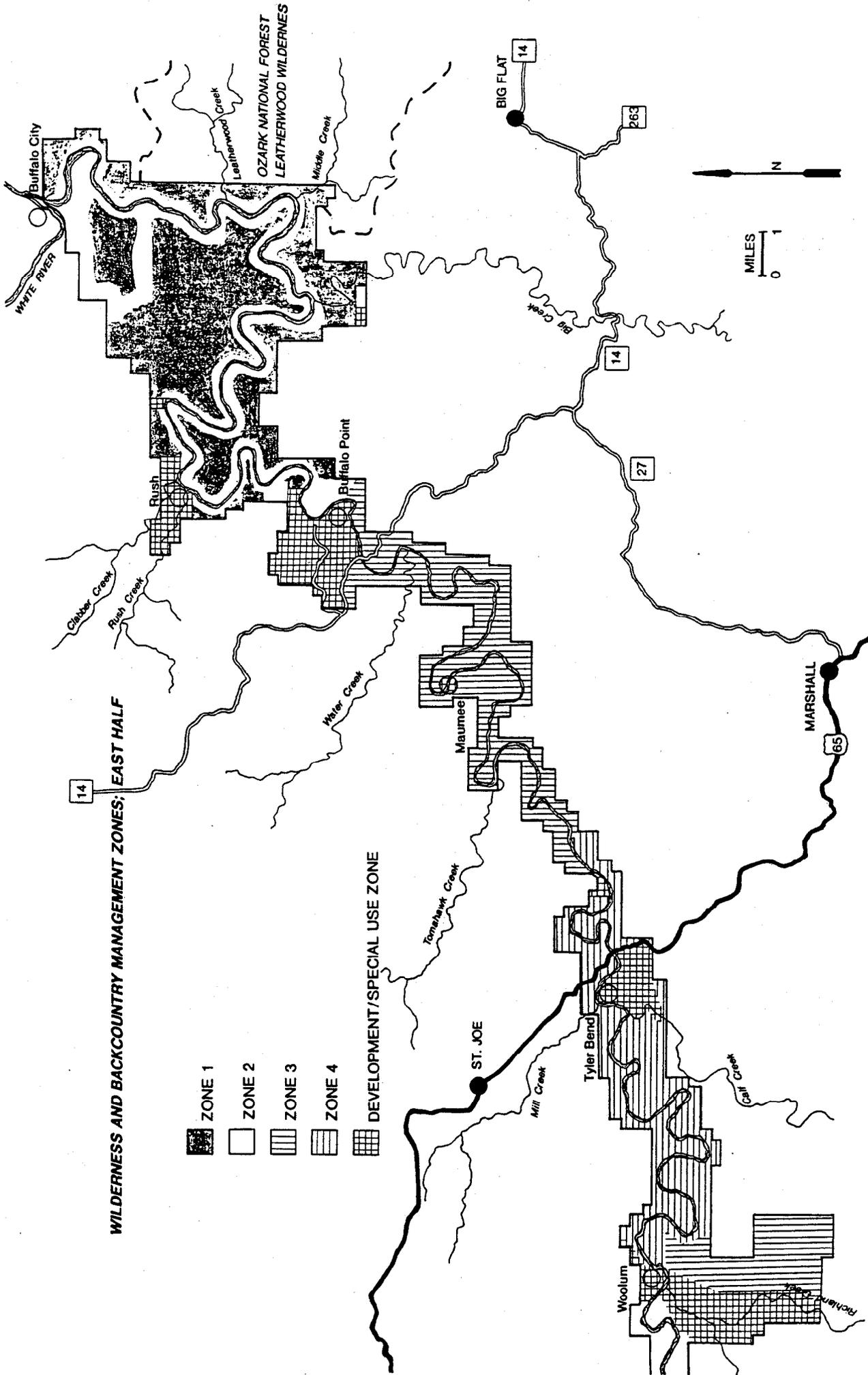
This inventory reflects the backcountry trail system as of 7/94. It does not include all primitive and unmaintained routes, including abandon roads, which may also be traveled by hikers and horseback riders. It does not include trails in developed areas such as Tyler Bend or Buffalo Point.



**WILDERNESS AND BACKCOUNTRY MANAGEMENT ZONES: WEST HALF**

-  ZONE 1
-  ZONE 2
-  ZONE 3
-  ZONE 4
-  DEVELOPMENT/SPECIAL USE ZONE

OZARK NATIONAL FOREST 21  
 UPPER BUFFALO WILDERNESS



# APPENDIX E

## Backcountry Trail Standards

Trail Type/Management Zone	Grades (10% = 10 ft. rise in 100 linear feet)	Tread Width (in.)	Right-of-Way Clearing	Fords & Bridges	Signing & Route Marking
Zone 1, wilderness areas	NA	NA	NA	NA	NA
Hiking/Zone 2 and wilderness	Average 1-10%, maximum of 15% for short distances Provide rock steps for grades over 15%	18	Maximum of seven feet high and four feet wide	Foot bridges will not be provided	Minimal use at trail intersections of: Rustic wood-routed signs with; -Directional information only -No distance (miles to) information Blazes and rock cairns for fords & crossing of non-system abandoned roads & Primitive Routes
Horse/Zone 2 and wilderness	Average 1-7%, maximum of 10% for short distances	24	Maximum of 10 ft. high and 6 ft. wide	Same as above	Same as above
Hiking/Zone 3 & 4	Average 1-10%, maximum of 15% for short distances Provide steps for grades over 15%.	18-24	8 ft. high and 5 ft. wide	Simple rock & plank foot bridges will be used on smaller streams when required to prevent trail widening	Rustic wood routed at trail intersections with; - Trail destinations - Distance - Information on significant features
Horse/Zone 3 & 4	Average 1-7%, maximum of 10% for short distances No Steps	24-36	10 ft. high and 8 ft. wide	Stream fords may be improved by moving large rocks to enhance footing	Same as above
Primitive Routes/All zones	Average 1-10%; 20% maximum for short distances	NA	-Maximum of 10 ft. height and 6 ft. wide. -No cutting of live trees greater than 2 inches in diameter (dbh) -Hand tools only	Same as standards for Zone 2 and wilderness	Route markers (preferably rock cairns) may be used to delineate routes in locations where off-route travel has become or is likely to become a management problem. Brushing in intersecting undesignated routes will also be utilized. Regulatory signs may be used for significant

**Appendix F**

Buffalo National River  
WILDERNESS  
MINIMUM TOOL DECISION QUESTIONNAIRE

If this action is covered in an approved planning document, **do not complete this form.**

**PROPOSED ACTION:**

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[When considering Wilderness values/resources, address: natural and cultural resources, solitude, primitive character, visitor experience, research effects, and recreation resources.]

1. What are the alternatives to the proposed action?

2. What long and short term impacts to Wilderness values are associated with each alternative?

3. What mitigating measures can be taken in association with each alternative?

4. How will the proposed action (if **non-emergency**) contribute to the management of Wilderness resources?

Comments:

Action Approved:-

Action Denied:-

\_\_\_\_\_  
Superintendent

\_\_\_\_\_  
(Date)

## Appendix I

### LEAVE NO TRACE GUIDELINES

#### PLAN AHEAD

1. Avoid popular areas during times of high use.
2. Repackage food into reusable containers to pack out with you.

#### TRAVEL LIGHTLY

1. Visit in small groups.
2. Stay on designated trails.
3. Do not cut across switchbacks.
4. Read your map and do not mark trails with tree scars or flagging.
5. Step to the downhill side of the trail and talk softly when encountering horseback riders.

#### CAMP WITH CARE

##### Campsite

1. Choose an existing site whenever possible. Restrict activities to the area where vegetation is already compacted or absent.
2. Camp at least 75 paces (200 feet) from streams and trails. The only exception are harden sites such as gravel bars with little or no vegetation.
3. Do not construct structures, furniture, or dig trenches.
4. Good campsites are found, not made - altering the site should be unnecessary.

##### Camofires

1. Eliminate campfire scars by using a lightweight stove for cooking.
2. When fires are utilized, use existing fire rings, away from large rocks or overhangs.
3. Do not char rocks by building new fire rings.
4. Gather smaller sticks from the ground that are no larger than the width of your wrist.
5. Do not snap branches of live or standing dead trees.
6. Put out fires completely before leaving. Remove trash from the ring.

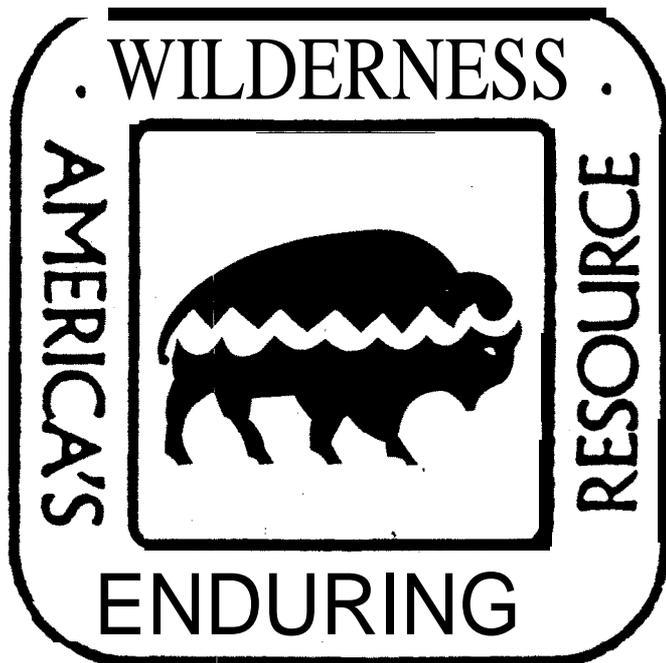
##### Sanitation

1. Deposit human waste at least 75 paces (200 feet) from water or camp in **catholes** dug 6 to 8 inches deep. Deposit toilet paper and fill the **cathole** with soil when finished.
2. To wash dishes or yourself, carry water away from the source and use small amounts of biodegradable soap. Scatter dishwater away from water sources.
3. Large groups or long stays may require digging a latrine or use of a lightweight portable toilet.
4. Scour your campsite for trash (including micro-trash such as burnt matches, twist-ties, etc.) and evidence of your stay. Pack out all the trash you can - even if it's not yours.

#### KEEP WILDERNESS WILD

1. Let natural sounds and quiet prevail. Avoid loud noises.
2. Control pets at all times, or leave them at home.
3. Treat our natural heritage with respect. Leave plants, minerals, and historical artifacts where they are found.

# WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN



**Buffalo National River, Arkansas**

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# BUFFALO NATIONAL RIVER

## WILDERNESS AND BACKCOUNTRY MANAGEMENT PLAN

### SUMMARY

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*A message from Superintendent, John D. Linahan.. ,*

We are pleased to announce that our work on the National River's Wilderness and Backcountry Management Plan has been completed. With the increasing popularity of the river, we are challenged to develop and maintain a balance between visitor use and resource protection, and between different visitor activities. We believe this plan is a major steps towards achieving that balance.

Various river user groups, from commercial canoe outfitter;; to horseback riders and hikers, will not be totally satisfied with all provisions of the plan. However, we believe that with its implementation, it will put us closer towards fulfilling the goals set in the 1964 Wilderness Act to manage wilderness *"...for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness so as to provide for the protection of these areas, the preservation of their wilderness character..;"* and the 1972 legislation establishing Buffalo National River *"... for the purposes of conserving and interpreting an area containing unique scenery and scientific features, and preserving as a free flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations..."* .

This document provides a summary of the plan. However, if you would like a full copy, please write to me: Superintendent, Buffalo National River, P.O. Box 1173, Harrison, AR 72602-1173.

#### PUBLIC COMMENTS ON DRAFT PLAN

A total of 2,369 comments were received for review and analysis. Of these, 1,993 were form letters either mailed by individuals or collected in the form of a petition. There were four different form letters received. The form letters expressed general opposition to any new regulation or restriction on recreational use and **supported** development of additional recreational facilities. The vast majority of form letters were signed by persons residing in the counties surrounding the National River.

There were a total of 376 letters submitted by individuals or organizations. General support for continued horse use was expressed in **103** letters, many of which were generated by a belief that horse use was to be completely eliminated by the National Park Service.

Support for completion of the Ozark Highlands Trail through the Lower Buffalo Wilderness Unit was expressed in 172 letters. Most of the supporters of the Ozark Highlands Trail expressed opposition to permitting horse use on hiking trails.

General support for providing greater recreational use of the National River was expressed in 41 letters. Concern about the current level of recreational use and its impact on natural and cultural resources, as well as wilderness experiences, and support for additional protective measures was expressed in 60 letters.

These numbers should be used only as a ██████ indication of the diversity of

input received. It should be noted that one letter might contain comments concerning several different issues.

A complete summary of the comments and the NPS response is available upon request.

---

## SELECTED ACTIONS

The actions proposed by this Plan are:

Implement a "Limits of Acceptable Change" approach to wilderness and backcountry management. Define four backcountry management zones which describe the acceptable range of desired resource, social, and managerial conditions in each zone. A summary of these management zones is presented on page 9 of the final plan.

a) Defining resource and social indicators and standards. Indicators are relevant, measurable factors which signify the condition of the backcountry or wilderness setting. Standards are quantified threshold levels established for each indicator. Standards are set at the upper level of what is considered acceptable, not necessarily what is desirable. A summary of the indicators and standards for each management zone are found on pages 11-12 of the final plan.

b) Designating all backcountry and wilderness lands in one of the four backcountry management zones. These designations are shown in Appendix D of the final plan.

c) Implement monitoring programs to determine whether standards are being met. Wherever standards are exceeded, management action will be taken to restore the conditions to meet the standards established.

## RIVER USE

Continue to manage river use under the existing River Use Management Plan. This plan has guided river management on the Buffalo since 1983. Overall limits on the number of rental boats permitted will continue to be the principle means of managing use levels. Table 2 on page 16 of the final plan indicates the maximum numbers of boats per day on each river segment.

### Ozark Highlands Trail

Identify and develop a long-distance hiking trail route for the Ozark Highlands Trail (Tyler Bend to **Sylamore** District of the Ozark National Forest) following completion of a separate site specific environmental assessment. In determining the Ozark Highlands Trail route through the Lower Buffalo Wilderness Unit, a primary objective will be to minimize the amount of new trail construction required and avoid the interior areas of the Lower Buffalo and Leatherwood Wildernesses.

### Erbie to Carver Horse Trail

Identify and develop long-distance horse trail route **from** Erbie to Carver following completion of a separate site specific environmental assessment. This trail will utilize existing abandoned roadways and avoid river crossing as much as possible.

### Primitive Routes

Provide for traditional horseback use by identifying a network of primitive routes for horseback riding utilizing abandoned roads and road **traces** in the area from the south end of Boxley Valley to Highway 7. The NPS would not maintain, sign or mark primitive routes. The **Primitive** Routes are intended to serve the needs of riders already familiar with the route. Users will be allowed to clear a limited amount of vegetation to keep the routes open. The NPS will provide maps indicating the location of **designated** routes and will consult with riding groups and others in determining which routes to designate.

### Cross-country Horse Use

The use of horses will be restricted to designated maintained trails and primitive routes from the south end of Boxley Valley to Highway 7 and a ¼ mile area surrounding the Cook Hollow/Cow Creek Trail in the Lower Wilderness. In all **other** backcountry areas without maintained horse trails horses and other stock may continue to be ridden on abandoned roads and gravel bars.

### Commercial Horse Operations

Require concession permits for all proposed commercial horse services. Commercial stock operations will not be approved in Wilderness.

### Horse Camps

Develop a drive-in horse camp at Woolum and consider sites for such camps at Pruitt and Carver following horse trail development in those areas.

### Voluntary Guidelines

Adopt voluntary "Leave No Trace" guidelines for size of groups, selection of backcountry campsites, use of campfires and sanitation.

### Motorboat Use

Maintain current motorboat restrictions which prohibit **motors** up stream of the Erbie ford and limit use elsewhere to motors with ten horsepower or less.

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The planning process was conducted over a three year period involving various National Park Service staff, other government agencies, interested businesses and organizations, and a task force representing conservation organizations, commercial outfitters and hiking, riding and canoeing clubs.

BUFFALO NATIONAL RIVER  
WILDERNESS AND BACKCOUNTRY PLAN

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## Section 1 - INTRODUCTION

Puroose of the Plan: The Wilderness and Backcountry Management Plan establishes goals, objectives, and standards for managing Buffalo National River's backcountry and wilderness lands. The plan includes management policies and actions to achieve these goals and objectives. The plan's overall goal is to preserve Buffalo National River's natural and cultural resources unimpaired for the enjoyment of present and future generations.

### Wilderness and Backcountry Manaagement Objectives:

Provide a broad range of backcountry experiences ranging from semi-primitive settings managed to encourage outdoor recreational use to wilderness settings managed to provide outstanding opportunities for solitude and other wilderness dependent activities.

Establish measurable indicators and standards for biophysical and social conditions, **continously** monitor the condition of those indicators, and implement management **policies** and programs to prevent degradation of backcountry resources and visitor experiences.

Manage designated wilderness lands in accord with the purposes and requirements of the Wilderness Act of 1964 and National Park Service management polices.

Develop and implement a coordinated interpretive program to educate backcountry users in "No Trace" practices which protect backcountry resources and experiences.

Perpetuate or restore ecosystems that are as natural as possible, retaining all of the ecosystem **components** and their functional relationships.

Scope of the Plan: The plan applies to the backcountry and designated wilderness areas within Buffalo National River. "backcountry" is defined in National Park Service Guidelines (NPS-77) as follows:

The term backcountry, refers generically to primitive, or little developed park lands or waters...Developments within backcountry areas are generally limited to trails, unpaved roads and administrative facilities associated with dispersed recreational use.

Wilderness are those areas which have been designated by law as part of the National Wilderness Preservation System. The term "backcountry" refers to all other

undeveloped portions of the National River. This plan focuses primarily on managing recreational use of both wilderness and backcountry areas. Some types of recreational use (i.e. caving) or significant resource concerns (i.e. water quality) are addressed in separate plans related to that specific use or resource.

**Area Description:** Buffalo National River is located in the Ozark Highlands of northwest Arkansas. It was **included** in the National Park System in 1972 "*... for the purposes of conserving and interpreting an area containing unique scenery and scientific features, and preserving! as a free flowing stream an important segment of the Buffalo River in Arkansas for the benefit and enjoyment of present and future generations.. .*"

The Buffalo River watershed covers 1323 square miles (846,720 acres). From its headwaters in the Boston Mountains, the river flows eastward for 151 miles to its confluence with the White River. The lower 135 miles of the Buffalo River is administered as a National River by the National Park Service. The U.S. Forest Service administers the uppermost sixteen miles of the river from the headwaters to the National River boundary.

The National River boundaries encompass 148 square miles (95,730 acres) forming a linear land unit. The Master Plan (1977) provides for a development zones totaling 8,190 acres and 9,407 acres in three private-use zones. The rest of the National River is classified as a **conservation** zone of 78,133 acres. This conservation (natural) zone includes lands reserved use and occupancy rights as well as agricultural lands maintained as hay fields (3,000+ acres). Approximately 80% of the National River is considered "backcountry". Designated wilderness encompasses 36,000 acres in three separate units.

**Reaional Perspective:** The Ozark and Ouachita Highlands include a wealth of public land providing wilderness and backcountry recreational opportunities. Within a 150 mile radius of the Buffalo National River are 4.2 million acres of National Forest lands. The Ozark, Ouachita and Mark Twain National Forests contain 19 designated wilderness areas covering 194,917 acres. An additional 9,874 acres of wilderness are designated on two National Wildlife Refuges (**Mingo** in MO and **Big Lake** in AR) within the region. Long distance hiking opportunities are provided by the Ozark Highlands Trail which crosses the Ozark National Forest and extends to the Buffalo National River. Nine streams on the Ozark, Ouachita, and Mark Twain National Forests are in the National Wild and Scenic Rivers System. Ozark National Scenic Riverways in southern Missouri includes 134 miles of Current and Jacks Fork Rivers. Within a two hour drive of the Buffalo River, five U.S. Army, Corps of Engineer reservoirs, provide boating, fishing, and camping opportunities.

Five urban centers are within a three hour drive of Buffalo National River: Springfield Missouri, Tulsa Oklahoma, Fayetteville-Springdale Arkansas, Memphis Tennessee, and Little Rock Arkansas. The area within a 250 mile radius of the river has a population of approximately seven million people. Residents of Arkansas and the six surrounding states account for 87% of Buffalo National River's visitation (Ditton, 1981).

## Section 2 - PLANNING CONSIDERATIONS

Management of the backcountry and wilderness lands within Buffalo National River, is guided by federal law, National Park Service policies, and guidelines. Management policies are based on the statutory provisions of the 1916 NPS Organic Act (16 USC 1 et. seq.), the 1964 Wilderness Act (16 USC 1131). National Park Service Management Policies (1988) establish consistent servicewide direction for the preservation, management, and use of wilderness and backcountry. Additional guidance for backcountry recreation management is found in NPS-77. Natural Resource Management Guidelines (1991).

Relationship to other Plans: The Final Master Plan (1977) for Buffalo National River provides general guidance for the management and development of the park. The Resource Management Plan (1994) provides more detailed direction with respect to the management of natural resources. The River Use Management Plan (1983) sets visitor use limits for various sections of the river. Other planning documents which relate to backcountry management are the Cave Management Plan (1984), Fitton Cave Action Plan (1984), Water Quality Monitorina Plan (1989), Fire Management Plan (1988), Trail Plan (1987), and Road Svstem Evaluation (1986).

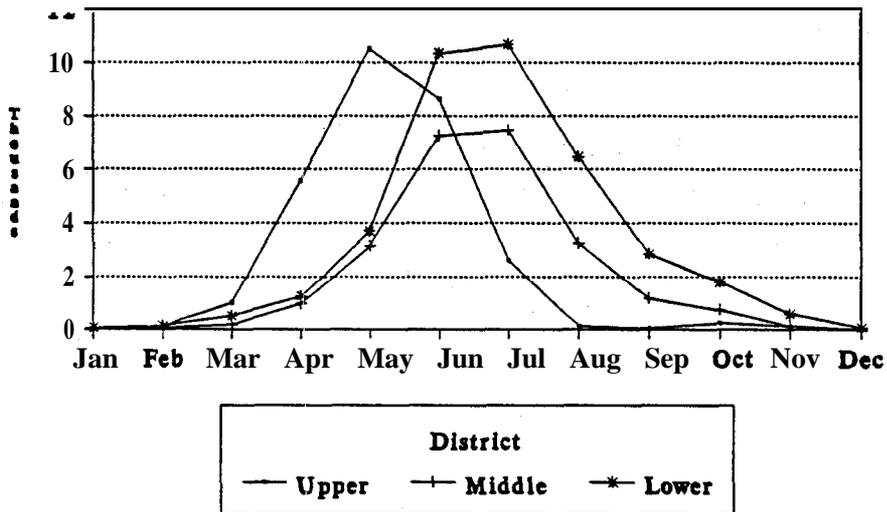
## Section 3 - CURRENT SITUATION

Recreational Uses: The park has approximately one million visitors annually. Recreational activities include boating, camping, fishing, hiking, swimming, backpacking, horseback riding, hunting and caving. Canoe float trips are the most popular recreational use but hiking and horseback riding are increasing as the trail system expands.

Visitor use follows seasonal patterns according to temperature and river levels. Day hiking, backpacking and horseback riding are most popular in the spring and fall. Hot summer weather limits some activities, but boating, fishing and camping still popular during the summer. Accurate backcountry use data has been difficult to obtain. Backcountry camping permits are not required. River use is estimated from canoe rental receipts. Trail use is estimated based upon vehicles at trailheads, observations on trails, and in some cases electronic counters.

**River Use:** Water levels on the Buffalo River fluctuate widely with seasonal rainfall. During average years, water levels are adequate for floating on the entire river from November through May. Peak river use begins in April and ends in August. With decreasing precipitation in June, the “floatable” portion of the river recedes in a downstream direction. The most intensive use occurs on the upper river from Ponca to Pruitt during April and May. On the middle and lower sections, river use peaks from June to July. From Maumee to the confluence with the White River, adequate flows for canoeing usually exist year-round.

### Buffalo National River River Use - 1993 (Boats)

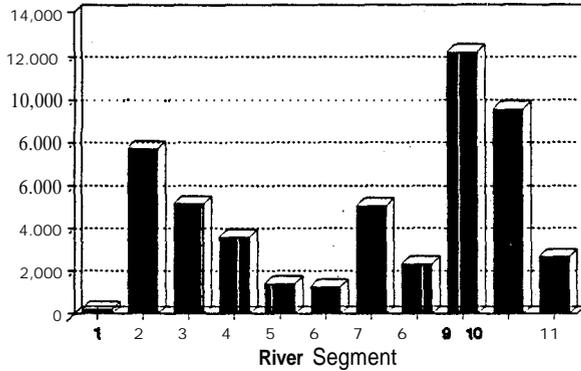


Based on NPS Public Use Reports

Figure 2

River use along the Buffalo is not evenly distributed over the entire length of the river. Thirty percent of the river receives seventy percent of the canoe traffic. Two of the three most used segments of the river pass through wilderness (Ponca to Kyles and Buffalo Point to Rush). Only a small portion of the river use involves overnight stays in backcountry areas.

Annual Canoe Use (Estimated)  
Buffalo National River



Source: 1981 Concession receipts

River Segments	Miles
1	Boxley (Hwy 21) to Ponca: 6.5
2	Ponca to Kyles Landing: 10.1
3	Kyles Landing to Pruitt: 13.2
4	Pruitt to Carver: 11.3
5	Carver to Mt. Hersey: 6.9
6	Mt. Hersey to Woolum: 8.5
7	Woolum to Gilbert: 20.7
8	Gilbert to Maumee: 12.9
9	Maumee to Buffalo Point: 10.2
10	Buffalo Point to Rush: 7.9
11	Rush to Buffalo City: 24.3

A study of river recreation on the Buffalo River was conducted in 1979-80 (Ditton, 1979/1 981). This study utilized extensive surveys of river floaters on the upper (Ponca to Hasty) and lower river (Maumee to Rush).

The survey indicated differences in the experience level and expectations of floaters on the upper and lower reaches of the river. Upper river floaters were more experienced, with only 17% floating for the first time compared to 40% first time floaters on the lower river. Upper river floaters tended to float with friends while lower river floaters floated with family members. For upper river floaters the river trip was the primary purpose of their visit but for lower river floaters river trips are a means to other family-oriented activities. Upper and lower river floater's perception of crowding varied; 43% of upper river floaters felt the number of people reduced their overall enjoyment while only 22% of lower river floaters felt that way.

Perceptions of crowding have probably resulted in some experienced floaters seeking river recreation elsewhere. A 1982, survey of floaters on the Little Missouri, Cossatot, Big Piney and Mulberry Rivers in Arkansas indicated 78.7% of those surveyed had floated the Buffalo River at least once and 60.9% of those were "displeased" with the increased use there. More than half (54.4%) said their visits to the Buffalo had become less frequent due to the increase in visitation. Additional

information with respect to river use can be found in the River Use Management Plan (NPS 1983) and Whitewater Recreation in Arkansas (Ark. Dept. of Parks and Tourism 1984).

**Trail Use:** Trail use has increased steadily with increased trail development. Initially, most trail use occurred on the extensive network of abandoned or closed roads which criss-cross the National River. Beginning in the mid-1980s, a substantial trail construction effort was begun. Hiking trails, including major portions of the *Buffalo River Trail*, have been completed on the upper river between Ponca and Pruitt and in the Tyler Bend area. Many old roads have been incorporated into the River's trail system, especially as horse trails.

Most trail use consists of day hikers and riders. Horse use is increasing river-wide, but is most concentrated in the Upper District. An inventory of backcountry trails is found in Appendix C.

**Hunting and Fishing:** The National River's enabling legislation specifically provides for sport hunting and fishing. The NPS cooperates with the Arkansas Game and Fish Commission (AG&FC) to manage wildlife and hunting and fishing on the National River. The National River backcountry provides significant opportunities for deer, squirrel, and turkey hunting. Trapping is prohibited.

Sport fishing is also a popular activity on the Buffalo. Favored game fish include black bass, bream, and catfish as well as several species of suckers. A survey of floaters in 1979 and 1980 indicated that fishing was a primary motivation for only 13.7% of those canoers surveyed (Ditton 1979 & 1980). A creel survey conducted by the AG&FC in 1991 and 1992 indicated that angling pressure on the Buffalo was low (Johnson 1993). Only 11% of floaters surveyed were anglers.

**Private Uses:** Private use includes three major types; private ownership in Boxley and Richland Valleys and at the "Camp Orr" Boy Scout Camp, use and occupancy reservations (U&O), and agricultural special use permits. Private lands and U&OS are closed to public use. Areas covered **by** agricultural special use permits are closed to camping. The U&OS and hay fields are widely dispersed all along the river but are concentrated in the Upper and Middle Districts.

## Section 4 - PLAN ORGANIZATION

*"The wilderness management plan will establish indicators, standards, conditions and thresholds above which management actions will be taken to reduce impacts. The National Park Service will monitor resources and document use. Where resource impacts -or demands for-use exceed established thresholds -or capacities, superintendents may limit or redirect use."*

National Park Service Management Policies (1988), page 6:5

This plan uses the concepts outlined in Limits of Acceptable Change (LAC) System for Wilderness Planning, by Stankey et al. (1985). LAC is a planning process consisting of a series of interrelated steps leading to the development of measurable objectives, defining desired backcountry and wilderness conditions. It also delineates the management actions necessary to maintain or achieve desired conditions. Emphasis is placed on defining and achieving the resource and social conditions desired for the area rather than determining how many users an area can absorb (i.e. carrying capacity).

The LAC process requires managers to define desired backcountry and wilderness conditions and to undertake actions to maintain or achieve these conditions. The process consists of nine major steps:

- Step 1** identifies area concerns and issues.
- Step 2** defines and describes opportunity classes (management zones).
- Step 3** is the process of selecting- resource and social indicators which represent backcountry conditions.
- Step 4** is an inventory to determine the condition of the indicators selected.
- Step 5** sets specific standards for the indicators selected.
- Step 6** identifies alternative opportunity class allocations.
- Step 7** identifies management actions required to implement each alternative.
- Step 8** is the evaluation and selection of an alternative.
- Step 9** is the implementation of the preferred alternative and the establishment of a program to monitor indicators.

Goals, by definition, are broad statements of intent, direction and purpose. Management objectives are statements that describe the specific conditions sought, serve as criteria in determining what management actions are needed, and are used as the basis for evaluating the effectiveness of management actions.

## Section 5 - MANAGEMENT ZONES, INDICATORS, AND STANDARDS

### Backcountry Management Zones

All backcountry areas of Buffalo National River are designated in one of four backcountry management zones. Each management zone is described in terms of the desired resource, social, and managerial conditions for that area. These descriptions provide guidance for management decisions related to backcountry resources and use.

Management zones are designated based upon the following criteria:

1. Type and amount of use;
2. Accessibility and challenge;
3. Opportunity for solitude;
4. Current resource conditions;
5. Management uses.

The maps in Appendix D depict the management zone designations.

## Backcountry Management Zones

### Zone I

Natural environment with little evidence of recent impact by humans. Recreation impacts are not noticed by most visitors. Campsites are few in number and infrequently used. Loss of vegetation at campsites is short term and recovers each year. Most nonrecreational impacts are greater than 30 years old.

### Zone II

Natural environment with some evidence of human impact in the form of maintained trails and campsites. Impacts are noticed by some visitors. Campsites are few in number but some are used frequently. Loss of vegetation at campsites is noticeable but largely recovers each year. Most nonrecreational impacts are greater than 20 years old.

### Zone III

A natural environment with moderate impact from recreational activities. Impacts in accessible sites or high use areas are visible to most visitors. Campsites are in moderate density with some being frequently used. Some vegetation in campsites does not recover substantially each year and small areas of bare ground remain. A few low standard roads and hay fields may exist but overall road density is very low.

### Zone IV

Area is moderately modified environment characterized by agricultural fields or roads interspersed throughout the area. Impacts in high use areas are obvious to visitors. Campsites are numerous and many are frequently used. Vegetation in high use camp sites does not recover from year to year. Compacted and exposed soil are common in sites accessible to motor vehicles.

### Social Setting

Outstanding opportunities for solitude exist. Very few other groups are encountered and the sense of challenge is relatively high. Group sizes are usually small.

Opportunities exist for solitude during off-season months. Other groups are often encountered but the sense of challenge is still high. Large groups are uncommon.

Opportunities for solitude often exist only during non-peak periods. Other groups are commonly encountered and the sense of challenge and risk is moderately high. Large groups are fairly common.

Opportunities for solitude are rare during peak periods. Other groups are usually within sight during peak periods and the sense of challenge is relatively low. Large groups are common.

### Managerial Setting

No trails are maintained and no signs are provided to assist access. Permanent facilities or structures are not provided. Ranger patrols are very infrequent. Regulatory restrictions are usually not required due to low use levels.

Trails will be maintained for light use. Trail signs will be limited to direction information. Permanent facilities will be limited to those required for resource protection. Ranger patrols are infrequent. Regulatory restrictions may be needed in some cases to protect resources.

Trail signs direct, distance and interpretive information will be provided. Permanent facilities will be provided for resource protection. Ranger patrols are fairly frequent. Regulatory restrictions may be needed in some cases to protect resources.

Trails will be provided to encourage recreational use. Trails and signs will be maintained to accommodate heavy use. Permanent facilities will be provided to aid visitors. Ranger patrols will be frequent. Some regulatory restrictions may be required to protect resources while accommodating heavy use.

## Indicators and Standards

indicators and standards are used to help determine when corrective management actions should be implemented. Indicators are relevant, measurable factors which signify the condition of the backcountry setting. Standards are threshold levels established for each indicator. Standards are set at the upper level of what is considered acceptable, not necessarily what is desirable. Monitoring of indicators will enable management to know, whether backcountry conditions are getting better or worse. Management still has the latitude to correct unanticipated problems not addressed by standards. The indicators and standards for each management zone are displayed in table 1.

A policy of nondegradation will be employed at Buffalo National River. The nondegradation policy seeks to prevent further degradation of current resource and social conditions in areas which are still well within standards and restore substandard settings to minimum levels.

BNR Wilderness & Backcountry Plan

Indicators & Standards  
Buffalo National River Wilderness/Backcountry Plan

TABLE 1

Indicator	Standards				Comments
	Class I	Class II	Class III	Class IV	
# of Groups Encountered/day outside of the river corridor	All sites rated 1	No more than 5% of sites rated 2, no sites rated as 3	No more than 5% of sites rated as 3	No more than 10% of sites rated as 3	No existing data available on current levels. Monitoring program will be required.
Litter in Campsites; 1 = < half full, 2 = < 2.5 gal. bucket 3 = > 2.5 gal. bucket	All sites rated 1	No more than 5% of sites rated 2, no sites rated as 3	No more than 5% of sites rated as 3	No more than 10% of sites rated as 3	Current campsite inventory indicates; Cat. 1 Sites = 17 Cat. 2 Sites = 42 Cat. 3 Sites = 8
Litter on River; "Can Index", # of cans per mile of river					Standards to be developed upon completion of surveys.
Overall Campsite Condition; 1 = Best to 5 = Worst	All sites rated 1 or 2	At least 75% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1 or 2, no sites rated 4 or 5	At least 50% of sites rated 1, 2 or 3, no sites rated 5	Based upon existing campsite inventory #CC1 sites = 3, CC2=19, CC3=20, CC4=21, CC5=3
Total Campsite Area (sq. ft.) Impacted	All sites; less than 500 sq. ft.	All sites; less than 1000 sq. ft.	At least 90% of sites; less than 2000 sq. ft., none greater than 3500 sq. ft.	At least 90% of sites; less than 2500 sq. ft., none greater than 5000 sq. ft.	Based upon existing campsite inventory # of sites; <500=10, <1000=26 <2000 = 49, <2500= 52 (67 total)

Table 1 (Cont.)

Indicator	Zone 1	Zone 2	Standards	Zone 3	Zone 4	Comments
% Soil Exposure within Campsites 1 = 0-5%, 2 = 6-25%, 3 = 26-50%, 4 = 51-75%, 5 = 76-95%, 96-100%.	All sites rated 1	All sites rated 1 or 2	All sites rated 1, 2 or 3	All sites rated 1, 2, 3 or 4		Based upon existing campsite inventory; # of sites rated 1=14, 2=13, 3=9, 4=4, 5=13, 6=14.
# of Rock Fire Rings per campsite	0	0	No more than 1	No more than 1	No more than 1	
<b>Water Quality</b>						
<i>Fecal Coliform</i> Bacteria; Colonies per 100 milliliters of water sample	All samples within 1/2 the standard deviation of the geometric mean.	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Based upon <u>BNR Water Quality Report; 1985 - 1990</u> mean values under base flow conditions. When standards are exceeded site will be retested to verify value and attempt to determine source.
Turbidity; (FTU)	All samples within 1/2 a standard deviation of the mean.	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Based upon <u>BNR Water Quality Report; 1985 - 1990</u> mean values under base flow conditions.

## Section 6 - MONITORING PROGRAMS

All indicators listed in Table 1 require a monitoring program to determine whether they are within the standards set for each management zone.

Camosite Condition: Monitoring procedures for litter in campsites, overall campsite condition, total campsite area, campsite soil exposure, and the number of fire rings per site are detailed in the Buffalo National River Backcountry Camosite Inventory and Monitoring Procedures (1991). All sites will be monitored at least once every five years on a rotating basis. Sites which failed to meet standards will be monitored the following year to determine whether corrective actions have been successful. A database + data management program has been developed to store and analyze all campsite monitoring data.

Number of Boats/Mile of River/Day: This indicator serves as an approximation of the density of canoes on various segments of the river and the resulting crowding. Monitoring will be accomplished by examination of NPS concession receipts to determine the number of rental boats using each river segment daily. Total river use will be calculated by adding the estimated number of private boats.

Number of Groups Encountered per Day: This indicator serves as an index of crowding in backcountry areas away from the river, specifically on trails. An initial survey will be conducted to determine the average number of encounters on various types of trails. This will be correlated to the overall number of people using the trail. Monitoring will then be based upon trail counter readings and the estimated number of group encounters to be expected.

Litter on the River: A monitoring program will be developed which surveys sample portions of the river to determine the number of beverage cans recovered per mile of river. Beverage cans serve as an index of the overall amount of litter generated by recreational use.

Water Quality: Monitoring of water quality indicators will be accomplished through the existing monitoring program. Site specific investigations will be carried out in additional areas if evidence of water quality degradation is found.

## Section 7 - POTENTIAL MANAGEMENT ACTIONS

**In cases** where established standards are not being met or the condition of indicators is deteriorating, a management response to improve condition will be required. The appropriate response will vary depending upon the specific problem to be corrected. When determining the most effective and appropriate response, priority will be given to actions which are effective but impose the least restrictive requirements on the public and require the least infrastructure development. If monitoring indicates the initial management actions are ineffective, more restrictive or intensive actions will be implemented and tested through continued monitoring. The following tables provide a guide for determining appropriate management actions directed at improving backcountry conditions.

### Potential Management Actions Improving Unacceptable Site Conditions (In order o'f Preference)

#### Manaaement Zone 1 & 2

- \***Offsite** Leave No Trace Education
- \*Contact Repeat Users
- \*Campsite Restoration
- \*Designated Campsites
- \*Limit Size of Groups Camping in Wilderness
- \*Prohibit Open Fires
- \*Seasonal Campsite Closures
- \*individual Campsite Closures
- \*Area Camping Closure
- \*Camping Permit

#### Manaaement Zone 3 & 4

- \*Information and Education
- \*Increase Ranger contacts
- \*Contact Repeat Users
- \*Campsite Restoration
- \*Limit Size of Groups Camping in Backcountry Areas.
- \*Designate Campsites
- \*Campsite Closures
- \*Prohibit Stock
- \*Install Toilets
- \*Require Camping Permits

Directed at Reducing Crowding  
(In Order of Preference)

Management Zone 1 & 2

\*Encourage Use in Other Areas Outside of Wilderness

\*Modify or Remove Existing Facilities

\*Limit Size of Groups Camping in Wilderness

\*Restrict number of concessioner launches at specific locations on high use days.'

\*Camping Permits

Management Zone 3 & 4

\*Encourage Use at Other Times or Places

\***Improve** or Modify Existing Facilities

\*Require Staggered Launches at access areas.

\*Restrict number of concessioner launches at specific locations on high use days.

\*Limit Size of Groups Camping in Backcountry Areas.

\*Camping Permits

Section 8 - RIVER USE MANAGEMENT

During the 1970's, steady increases in river use on the Buffalo led to problems: crowding at access points, congestion at sites along the river, conflicts between users, litter, and improper human waste disposal. These problems lessened the quality of the river experience for some and resulted in resource damage to some areas. In an effort to address these concerns, a River Use Management Plan (RUMP) for Buffalo National River was completed in 1983. The RUMP established maximum use levels for various river segments (between major access points) for weekend days and week days. In terms of use the RUMP provides a variety of river float trip experiences.

Low Use (up to 8 boats per mile).

Moderate Use (between 9 and 20 boats per mile).

High Use (over 20 boats per mile).

The maximum number of watercraft (canoes, johnboats, kayaks, rafts, and inner tubes) to be permitted on a given section of the river on a given day is determined by multiplying the maximum number of boats per mile by the number of river miles in the individual river section.

Table 2 indicates the maximum number of boats per day permitted for each segment according to the current River Use Management Plan (U.S.D.I., 1983).

Table 2

Maximum Number of Boats Per Day  
(River Use Management Plan, 1983)

River Segment (miles)	Weekend Day (Fri.- Sunday) <small>Use category/Max. # boats per day.</small>	Week Day (Mon. - Thursday) <small>Use category/Max. # boats per day.</small>
Hwy. 21 to Ponca at Hwy. 74 (6.0)	low/49	low/49
	high/494	moderate/206
Kyle's to Pruitt (13.2)	high/488	moderate/264
Pruitt to Carver (11.3)	moderate/226	low/90
(7.0)	low/52	low/52
Mount Hersey to Woolum (8.4)	low/68	low/68

River Segment (miles)	Weekend Day (Fri.- Sunday) <small>Use category/Max. # boats per day.</small>	Week Day (Mon. - Thursday) <small>Use category/Max. # boats per day.</small>
Woolum to Tyler Bend (15.5)	moderate/302	low/l 21
Tyler Bend to Gilbert (5.6)	moderate/l 12	moderate/l 12
Gilbert to Maumee (11.5)	moderate1258	moderate1258
Maumee to Buffalo Point (10.6)	high/490	high/490
Buffalo Point to Rush (7.4)'	high/277	high/277
Rush to the White River (23.4)'	low/l 94	low/l 94

Wilderness Segments

implementation of the RUMP requires ongoing monitoring of use on each segment of the river. Priority will given to high use segments within wilderness areas (marked by an \*). Results from these surveys will be evaluated to determine whether levels of use remain within the limits set by the RUMP. The RUMP also outlined strategies to limit use if the maximum use levels are exceeded on more than 2-3 days in one season. The strategies are:

1. Require concessioners to distribute their put-ins to more than one location. Only a certain percentage of their boats could be launched at a given location, the remainder would have to launched at other access points;
2. Require concessioners to stagger put-in times at certain access points.
3. Require a permit system for private boaters.

Depending upon the extent. of use and resulting impacts, these strategies may or may not be required. If they are needed, the NPS will analyze the impacts of these measures and consult with interested segments of the public and with concessioners before implementation.

River use surveys have been conducted (1991-94) to determine river use on some sections of the river. Some popular high use segments, such as from Ponca to Kyles, have remained below the maximum limits. However, moderate and low use segments, such as Pruitt to Carver, have exceed the maximum limit by more than 100% during a portion of the float season.

Boats rented from NPS concessionaires account for 75-90% of the river use during the peak use seasons. Limiting the overall number of rental boats available is the

only direct management action currently utilized to limit river use. Each concessioner's allotment of boats must be launched or picked up within their assigned district. The districts are as follows; Upper - western boundary to Mt. Hersey, Middle - Mt. Hersey to Maumee, Lower - Maumee to the White River.

Commercial Boats Authorized by District/Type

	<u>Canoes</u>	<u>Johnboats</u>	<u>Rafts</u>
Upper District	441	0	19
Middle District	327	10	15
Lower District	500	15	10
White River	0	85	12
Totals	1250	110	56

Concessioners must either put-in or take-out in their own district at approved locations, except when renting boats for trips of four days or longer. Given the seasonal use patterns in different (districts, it is rare for all of the concessioner's authorized boats to be on the river on the same day. Some concessioners do not rent rafts even though they have authorization to do so. In the past several years actual commercial **johnboat** use has been considerably below the level authorized.

## Section 9 - WILDERNESS MANAGEMENT

The Wilderness Act of 1964 defines wilderness as an area:

where the earth and its community of life are untrammelled by man;  
of undeveloped federal land retaining its primeval character and  
influence;  
which generally appears to have been affected primarily by the forces  
of nature;  
which is protected and managed so as to preserve its natural  
conditions;  
which has outstanding opportunities for solitude or a primitive and  
unconfined type of recreation;  
which may also contain ecological, geological, or other features of  
scientific, educational, scenic, or historical value.

Public Law 95-625, dated November 10, 1978, established the Buffalo National River Wilderness Area in three separate units (See maps in Appendix B).

Upper Buffalo Wilderness (UBWU);	2,200 Acres
Ponca Wilderness (PWU);	11,300 Acres
Lower Buffalo Wilderness (LBWU);	22,500 Acres
Total:	36,000 Acres

Wilderness Management Goals and Objectives: The primary goal of wilderness management, as defined by the Wilderness Act, is to administer these areas “for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and *enjoyment* as wilderness so as to provide for the protection of these areas,’ the preservation of their wilderness character... ”.

### Wilderness Management Objectives:

--Provide for the long-term protection and preservation of the area’s wilderness character under a principle of non-degradation. The area’s natural condition, including opportunities for solitude, opportunities for primitive and unconfined types of recreation, any ecological, geological, or other feature of scientific, educational, scenic or historical value will be managed so that it remains unimpaired.

--Manage Buffalo National River lands adjacent to wilderness in such a manner as to protect and preserve the wilderness character of the

wilderness units. In cooperation with the U.S. Forest Service, recognize and manage contiguous wilderness units as cohesive wilderness areas by developing compatible management objectives, policies, and actions.

--Provide opportunities for wilderness dependent recreational activities while limiting regulatory restrictions to the level required to preserve wilderness character and resources unimpaired for future use and enjoyment as wilderness.

--Use the minimum of tools, equipment, or structures to successfully and safely accomplish wilderness management objectives. Exclude or remove unnatural visual and noise intrusions from the wilderness to the maximum extent possible.

--Provide information, education and interpretation to the public in order to promote appreciation for wilderness as a natural resource.

The Wilderness Act provides for recreational use and certain other uses within wilderness, but only those uses which do not conflict with the overriding purpose of the land **as wilderness**. In short, the higher value of wilderness designation is the creation, **by law**, of an area where Earth and its community of life are untrammelled by man. The result is far more than just creation of areas within parks where motorized uses, roads, and visitor service areas are prohibited or an area set aside for canoeing or backpacking. The result is an area that is to be kept forever wild, where the presence of humans is permitted on a temporary basis and only on the condition that this presence does not interfere with ongoing natural processes or other values of wilderness.

Status of Buffalo National River Wilderness:, When Congress created the Buffalo National River Wilderness Area in 1978, it designated 10,529 acres as wilderness and identified an additional 25,471 acres as potential wilderness additions. 'Some of the potential additions were still privately owned and Congress directed the National Park Service to acquire those lands and once acquired to manage them as wilderness. The law provided a process to convert the potential additions to designated wilderness through publication of a notice in the Federal Register that all uses, prohibited by the Wilderness Act, had ceased.

Such a notice was printed in the Federal Register on October 18, 1993. This notice designated all but 1,007 acres of the potential wilderness addition acreage as wilderness. The remaining potential additions are divided between nine separate parcels in the three units of the BNR Wilderness Area. Most of those remaining are use and occupancy reservations which will expire by the year 2004.

The only exception is a 180 acre parcel owned by the Boy Scouts of America within the boundaries of the Ponca Unit. This undeveloped land is part of Camp Orr and the Congress specifically stated their intentions regarding its status.

*" The committee agreed to exclude from potential wilderness addition, at this time, that acreage owned by the Boy Scouts on the same side of the river where wilderness is **designated**. "* House Committee Report No.1 2536

The Camp Orr area had been identified as one of three private use zones in the National River's legislative history. In 1984, the National Park Service acquired a scenic easement on all of the Camp Orr property to prevent incompatible development and use. Since nonfederal land may not be designated as wilderness and Congress has made specific provisions, the National Park Service will defer acquisition of Tract No. 32-1 11 so long as use and ownership of the property remain unchanged.

### Wilderness Unit Descriptions

The **Upper Buffalo Wilderness Unit** is located in the westernmost portion of the National River. This unit adjoins the Upper Buffalo Wilderness Area (11,746 acres) administered by the U.S. Forest Service (Ozark National Forest). Recreational use is limited by the high skill level required to run the river, limited access, and the absence of maintained trails. River use is limited to highly skilled white-water boaters during brief periods of high water. In 1992, a 15.8 mile segment of the Buffalo River, upstream from the BNR boundary, was designated as part of the National Wild and Scenic River System. The USFS Upper Buffalo Wilderness Area is a Class 1 airshed in accordance with the Clean Air Act of 1977.

Significant resource concerns include the presence of feral swine on the adjacent USFS Wilderness lands.

Goal: Manage the unit so as to preserve the area's natural conditions, primeval character, and outstanding opportunities for solitude.

Goal: Cooperate with the U.S. Forest Service to manage the adjacent National River and National Forest wilderness lands as a unified wilderness area.

The **Ponca Wilderness Unit** has the most recreational use of any wilderness area in Arkansas. Access is facilitated by paved highways on its perimeter, by an extensive trail system and by high levels of seasonal river use. Total river use was estimated in 1983 at 7,700 canoes per year, 78% of which occurred in April and

May. The River Use Management Plan provides for high levels of river use for the Steel Creek-to-Kyles river segment. The RUMP sets an upper limit for this section of 494 boats per day on **weekends** and 206 boats per day on weekdays. While informal counts of over 600 boats a day have been reported, surveys in May 1993, recorded a maximum of 464 boats per day. The average for Saturdays in May was 389 boats per day.

There are 30.2 miles of designated hiking and horseback riding trails and five major trailheads in the Ponca Unit. The concentration of floaters, hikers and horseback riders from six separate trails in the vicinity of Horseshoe Bend and **Hemmed-in-Hollow** creates congested conditions during peak use days in the spring. An estimated 90% of visitors to this area are day users.

The discovery, in 1992, of an infestation of exotic gypsy moths on private land immediately north of this unit poses an immediate environmental threat for the area. Forest defoliation by the moth and the impact of eradication efforts on nontarget species are concerns.

Goal: Provide outstanding opportunities for those primitive forms of recreation which either require or are enhanced by a wilderness setting, while preserving the area's natural conditions.

The **Lower Buffalo Wilderness Unit** encircles the lower river and adjoins the USFS Leatherwood Wilderness Area (16,956 acres). The combined 39,456 acres of the Lower Buffalo and Leatherwood Wilderness Areas creates the largest area of designated wilderness in the Ozark.-Ouachita Highlands. This area is also unique regionally in providing multi-day river trips within a wilderness setting. Annual river use from Buffalo Point to Rush (**7.5** miles) is estimated at 9,500 boats per year. The 24-mile segment of river from Rush to the White River has lower use (estimated 2,700 boats per year). The river channel is not included in this wilderness unit to allow for continued use of motorized boats (ten horsepower maximum limit). **Floating**, fishing, horseback riding and hunting are the primary recreational activities. It is **estimated** that most floaters on this segment camp at least one night between Rush and **the** White River.

Abandoned roads form an extensive network of unmaintained and unmarked primitive routes used by horses and hikers.

The area also has numerous traditional hunting camps established during deer and turkey season. Some camps are accessed by boat and other by pack horse. Fishing is a popular activity, particularly with motorized boaters. The last 2-3 miles of the Buffalo is used extensively **by** anglers who motor up from the White River to

fish for smallmouth bass.

Recently established populations of feral swine on both the Leatherwood and Lower Buffalo Wilderness Areas posed a significant environmental threat.

Goal: Provide outstanding opportunities for wilderness camping and river trips.

Goal: Cooperate with the **U.S.** Forest Service to manage the adjacent National River and National Forest wilderness lands as a unified wilderness area.

Wilderness Fire Management: Wildfires, whether ignited by lightning or humans, have had a significant effect on some of the Ozark's vegetative communities. Historically, approximately 98 percent of fires in the Buffalo River area are man-caused; only two percent are non-human ignitions. Organized wildland fire suppression efforts begun in the mid-20th century may have led to changes in the species composition and structure of some communities. Comprehensive studies of the fire history of these areas may indicate the need to utilize prescribed fire to maintain or restore native plant communities. Due to the relatively small size of all three wilderness units and the extent of development on their boundaries, all wildfires, regardless of cause, will be suppressed by confinement or containment strategies.

All suppression activities will be planned and implemented in accordance with the "minimum tool" principle so as to cause the least amount of environmental impact (see next section). Fireline constructed during suppression efforts will be rehabilitated.

Details of fire suppression and prescribed fire programs at Buffalo National River are contained in the Buffalo National River Fire Management Plan (1988).

Use of Motorized Equipment and Mechanical Transportation

*"The manager should use the minimum tool, equipment or structure necessary to successfully, safely and economically accomplish the objective. When establishing the minimum tool and equipment necessary for a management need within wilderness areas economic factors should be considered the least important: of the three criteria. The chosen tool or equipment should be the one that least degrades wilderness values, temporarily or permanently. "*

*"In special or emergency cases involving the health and safety of wilderness users or protection of wilderness values aircraft, motorboats and motorized vehicles may be used. "*

Department of the Interior  
Secretarial Order No. 2920

Administrative Use: In accordance with Department guidelines (Secretarial Order No. 2920) all management actions within wilderness will be governed by the "minimum tool" principle. Motorized equipment or mechanized transportation may be used in wilderness for fire, medical, searches and other life threatening emergencies. In emergency situations the designated Incident Commander has the authority to approve the use of motorized equipment. All decisions by an Incident Commander to utilize motorized equipment, mechanized transportation, or aircraft (below 2,000 feet above ground level) in wilderness for emergency operations will be documented in *Case Incident Reports* for reviewed by the Wilderness Coordinator, Chief Ranger and Superintendent.

In non-emergency situations, motorized equipment or mechanized transportation may only be used if the project is specific to wilderness management objectives and its use is determined by the Superintendent to be the minimum tool required. With the exception of boat motors in the Lower Buffalo Unit, motorized equipment and mechanized transportation will not be used for cyclic maintenance, law enforcement patrols, or other routine operations in wilderness.

All non-emergency use in wilderness of motorized equipment, mechanized transportation, or aircraft below 2,000 feet above ground level requires prior written approval by the Superintendent. The written determination will include an outline of the project, options considered, mitigation actions, and the relationship

of the project to wilderness management objectives (NPS-77, Chapter 3, page 80). Refer to the Minimum Tool Decision Document in Appendix F.

Copies of Case Incident Reports regarding emergency uses and written determinations regarding non-emergency uses will be provided to the park's wilderness coordinator as soon as available. An annual report summarizing all uses of motorized equipment and mechanized transportation during the previous year will be prepared by the wilderness coordinator and submitted to the Superintendent by January 31.

Public Use of Motorized Equipment and Mechanized Transport: The use of motor vehicles, motorized boats, bicycles, horse-drawn carts and other motorized and non-motorized mechanical forms of transportation in wilderness is prohibited by law, with the exception of manual or motorized wheelchairs (as defined by Title 36, CFR) used by disabled visitors. In wilderness, the use of motorized equipment, such as chainsaws or electrical generators, is prohibited by Superintendent's Order.

Management Facilities in Wilderness: There are currently no structures or facilities in wilderness units used for administrative purposes, nor are there any anticipated needs for such facilities in wilderness. In accordance with NPS policy, no permanent aircraft landing areas will be constructed or maintained in wilderness. Temporary landing spots may be cleared to meet the minimum requirements of emergency life threatening situations.

Permanent shelters for public use will not be constructed or maintained in wilderness. Use of existing structures for camping purposes is prohibited by Superintendent's Order.

Cemeteries in Wilderness Areas: Six cemeteries are located within the BNR Wilderness. All six are located on federal land within the Lower Unit. All are relatively small family burial sites. None have had recent (post-park establishment) interments.

Private individuals or organizations may maintain cemetery grounds or grave sites with the Superintendent's written approval. All such work will be carried out in accordance with the provisions of the Wilderness Act, NPS Management Policies, this plan, and a Letter of Authorization outlining the scope and nature of work to be done.

Persons visiting a cemetery in wilderness must do so without the use of motorized equipment or mechanized transportation. The NPS will, to the extent legally

possible, assist family members requesting to visit the grave sites of relatives buried in cemeteries within wilderness.

Wilderness River Management: The only river sections within designated wilderness extend from the western park boundary to the upper end of Boxley Valley (Upper Buffalo Unit) and **from** Steel Creek to near Kyles Landing (Ponca Unit). The Buffalo River passes through the Lower Buffalo Unit from Ingram Creek below Buffalo Point to the confluence with the White River, but the river itself is not designated as wilderness. A review of NPS planning documents (USDI Final EIS Wilderness Recommendation 1978) indicates the deletion of the river channel was done solely to allow the continued use of motorized boats. Motor use is restricted by regulation to boat motors of ten horsepower or less. The wilderness boundary along this portion of the river is recognized as the water's edge. With the exception of motorboat use, the Lower Buffalo Unit will be managed as wilderness.

Research in Wilderness: The park will seek and provide for scientific study and monitoring which improves our knowledge of wilderness ecosystems as well as the impacts of visitor use and **management** actions. Research projects may be conducted in wilderness if they meet all of the requirements outlined in NPS Management Policies (Chapter **6:6**). Such research activities will be documented in an appropriate format, either an **environmental** assessment or categorical exclusion (See Southwest Region Environmental Compliance Handbook).

BNR Wilderness Committee: A standing Wilderness/Backcountry Committee will be established. The committee **will** be composed of the park wilderness coordinator, District Rangers, a staff interpreter and trails foreman (or other Maintenance representation) and others that the Superintendent may appoint. The committee will provide a forum for discussion of wilderness and backcountry related issues and provide **recommendations** to the Superintendent.

## Section 10 - BACKCOUNTRY TRAIL SYSTEM

### Trail System Objectives:

Develop and maintain a variety of hiking and horseback trail opportunities while minimizing conflicts with other uses and resources.

Avoid sensitive, fragile, and hazardous resources such as archeological sites, wildlife nesting sites, caves, and mine openings.

Incorporate existing abandoned roads where appropriate.

Design new trails and manage existing trails to prevent soil erosion.

The 1987 Trail Plan further developed the broad trail proposals outlined in the park's Final Master Plan (U.S.D.I. 1977). The Trail Plan was conceptual and only general trail corridors are identified. These corridors included a river-long hiking trail (Buffalo River Trail), major loop and spur trails which connect with the Buffalo River Trail and horse trails following old road beds.

Backcountry Trail System Planning: Backcountry trail system development will be guided by the overall goals, objectives and policies outlined in this plan. In addition to maintenance requirements, backcountry and wilderness trail system planning will take into account current levels of trail use, types of use, conflicts between user groups, private property rights, and opportunities for solitude in wilderness.

The backcountry trail system will include two categories:

**1. Maintained Trails** - Trails built and maintained by the NPS. Maintenance will include appropriate clearing, tread work, erosion control, and signing or marking. Maintenance will be conducted by NPS employees and volunteers directed by the NPS. An inventory of existing backcountry trails is found in Appendix C. Trail standards for maintained trails are included in Appendix E.

**2. Primitive Routes** - Primitive routes are traditional routes, designated by the NPS in Special Horse Use Zones (See Section 15), which are used by horseback riders and hikers (generally following abandoned roads or trails). Primitive routes will not be maintained by the NPS nor will the NPS direct volunteer maintenance. Primitive routes will not be signed and markings will be limited to areas requiring delineation to prevent resource impacts. Users of primitive routes will be permitted to clear downed trees and vegetation on designated routes according to standards outlined in Appendix E.

Primitive routes are appropriate for low use levels by experienced users familiar with the area. Once designated, routes will be indicated on maps available to users. The primitive route system will be flexible in **accommodating** additional routes suggested by the public, relocation of routes, or even elimination. Unless an emergency situation exists, the NPS will consult with interested user groups before any routes are closed or significantly rerouted.

Decisions not to designate a route, or to modify or eliminate a route will be based upon: 1) Known or easily predicted resource impacts; 2) Conflict with private property; 3) Significant health or safety hazards.

### Proposed Additions to the Maintained Backcountry Trail System

In addition to the existing backcountry trails listed in Appendix C, the following trails are proposed by this plan:

**1. Ozark Highroads Trail (OHT) Extension** - The OHT will be extended from its current terminus at Highway 65 to the Sylamore District of the Ozark National Forest. The OHT would be developed as a trail for hikers (stock use would be prohibited). The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement. A major objective is to select a route which minimizes new trail mileage through the Lower Buffalo Wilderness Unit.

**2. Erbie to Carver Horse Trail** - A **maintained trail** for horses would be developed from Erbie to Carver. The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement. A major objective identified by this plan will be to select a route which utilizes existing abandoned roads and avoids river crossings whenever possible. The route being utilized by horseback riders will be considered a primitive route until a final maintained trail is completed.

**3. Reroute of Horse Trail between Woolum and Tyler Bend** - A reroute of horses from those sections of the Buffalo River Trail which are too narrow and steep for stock use will be developed. The actual route will be determined following the preparation of an environmental assessment (**EA**). The EA will assess alternatives, environmental impacts, and provide public involvement.

These trail system additions will be developed in segments working from west to east. Actual trail development will be pending available funds, completion of existing trail maintenance needs, and volunteer efforts. An environmental assessment will be completed for all new trails before any construction begins. New backcountry trails (maintained) will be limited to those listed above.

Trail Use Monitoring:

--**Electronic** trail counters to obtain monthly estimates of use on major trails.

--Trail registers or user survey cards to obtain data on group size, type of use (hiking, stock or bicycle), percentage of day users, percentage and duration of overnight stays, entry and exit points, number of user conflicts and other information needed by park managers to plan for and, where possible, address visitor needs.

Trail Maintenance Standards: Standards for trail design and maintenance will, wherever practical, follow guidelines set forth in the Appendix E and the NPS Trails Management Handbook (1983).

Volunteer Trail Maintenance: District Rangers will implement an “Adopt-a-Trail” program to encourage volunteer efforts to assist in maintaining trails in their districts.

**Backcountry Trail Signing and Marking**

Goal: Provide trail signing at a level consistent with management zone designation of the area.

Backcountry Sign Policy: Management zone designation will determine the appropriate sign standards for an area. The intent is to minimize the number of signs needed within the backcountry by; 1) installing informational trailhead signs, and 2) producing high quality maps and information to visitors before they enter backcountry areas. Trailheads will **provide** informational material regarding appropriate “Leave-No-Trace” practices, as well as trail direction and distance information, and appropriate safety messages.

**Use of Signs in Wilderness:** *“Signs detract from the wilderness character of an area and make the imprint of man and management more noticeable. Only those signs necessary to protect wilderness resources or for public safety, such as signs identifying trails and distances,, will be permitted”* (NPS Mgmt. Policies, Chapter

**6:6).** Only those signs necessary for wilderness resource protection or public safety will be provided. Signs required for visitor safety will be used if a clear and present danger exists. "Danger" in this context is a condition or situation above and beyond hazards which are inherent to wilderness.

At points where trails enter wilderness, the boundary will be marked to inform the public of the area's status. Locations where the public is likely to enter the wilderness via abandoned roads (including primitive routes) should be posted with Carsonite (TM) posts (or an equivalent) with an appropriate message (*WILDERNESS BOUNDARY, Motorized Equipment and Mechanical Transportation PROHIBITED, National Park Service, Buffalo National River*). On designated trails, routed wood signs or trailhead signs will be used.

In wilderness areas:

- ☞ signs will not be used to identify or interpret natural or cultural features;
- ☞ may be used to identify closures and restoration sites when necessary to prevent further degradation of natural or cultural resources;
- ☞ signs will not be placed in **areas** designated Zone 1, except with a written determination of need by the Superintendent.

### Trail Markers and Directional Indicators

Markings to indicate trail direction may be required where the trail route is difficult to discern. Examples include a little used trail that passes through a large, overgrown field or a trail that crosses a large gravel bar. Trail markings and directional indicators will be used only in locations where designated trails are difficult to discern. On primitive routes, markers or blazes will be limited to those required to prevent resource damage from the creation of multiple routes.

The marking technique will depend on its effectiveness and the availability of materials in a given situation. The following guideline is provided to ensure consistent trail markings throughout the trail system.

1. Forested Areas: Color blaze markings on trees (**2" X 5"**). White blazes on hiking trails and yellow on horse trails. The blaze can be canted (**45°**) to the left or right to indicate abrupt changes in trail direction or the intersection with another trail.
2. Open Areas: a) Rock cairns or; b) if rock cairns are impractical or ineffective,

3-4 inch diameter wooden posts may be used to mark the trail. A 2" X 5" painted rectangle will be used to indicate direction.

#### Maintenance Division Backcountry Sign Responsibilities

The Maintenance Division is responsible for the maintenance of backcountry signs. Specific responsibilities of the Maintenance Division include:

- Maintaining a sign inventory including, at a minimum, location, size, wording and composition of all trailhead and backcountry signs.
- Requisitioning materials as needed for new signs and for existing signs in need of replacement.
- Constructing all trailhead and backcountry signs.
- Installing all trailhead signs and signs located along the roadside which relate to trails.

#### Ranger Division Responsibilities

Responsibilities of the Ranger Division include:

- Assist the Maintenance Division with sign inventory.
- Initiate sign requests consistent with this plan.
- Installing and maintaining all backcountry signs.

## Section 11 - ENDANGERED SPECIES

### Threatened and Endangered Plants:

No plant species listed by the U.S. Fish and Wildlife Service (USF&WS) as endangered or threatened have been documented in Buffalo National River. A list of species currently classified as Category 1 or 2 which occur or could potentially occur in Buffalo National River is maintained by the Resource Management Office. A botanical assessment will be conducted before any management action is taken that could adversely impact any of these listed species.

### Threatened and Endangered Animals:

The Indiana bat, gray bat, Ozark big-eared bat and bald eagle have been documented within Buffalo National River and are listed as endangered by the U.S. Fish and Wildlife Service.

Indiana bats (*Myotis sodalis*) hibernate in caves within the park. Gray bats (*Myotis grisescens*) use caves in the park for both winter hibernacula and summer maternity colonies. Individual Ozark big-eared bats (*Plecotus townsendii ignis*) have been found in two caves. Several important bat caves are located within wilderness units.

Horseshoe Cave is located in the Ponca Wilderness Unit. This cave is utilized by gray bats in the summer and is closed by Superintendent's Order from May 15 to October 15. Recent surveys indicate Indiana and gray bats also using this cave as a hibernaculum. Even though no maintained trail exists, the two entrances to the cave provide the most direct route for hikers to get around an impassable portion of this popular scenic area. The entrances are not gated or fenced but a sign explaining the closure is maintained at each entrance. Public use in the area is being monitored.

The only cave with a gray bat maternity colony within Buffalo National River and is located in the Lower Buffalo Wilderness Unit. The entrance is located near the river but it is generally not visible from the river during the summer. The entrance is not fenced or gated but a sign, explaining the closure, is maintained.

Cave management and the protection of Indiana, Ozark big-eared and gray bats are addressed in the park's Cave Management Plan and recovery plans for each species. The policy at Buffalo National River will be:

--that trails should not be constructed within 500 feet of any cave used by

species of bats which are listed as endangered, threatened or category 1 or 2. If there is no alternative route, consultation with the U.S. Fish and Wildlife Service will be **completed** before any construction begins.

The bald eagle (Haliaeetus leucocephalus) is a common winter resident. The golden eagle (Aquila chrysaetos) is an infrequent winter resident. The highest concentration of eagles are found within the Lower Buffalo Wilderness. No eagles have nested within the National River or vicinity in recent history. The Florida panther (Felis concolor corvi) has not been documented within Arkansas in recent years but suitable habitat does exist.

Animal species which are candidate species for federal listing or which are ranked by the Arkansas Natural Heritage Commission are kept on file by the Resource Management office.

Endangered Species Consultation: In accordance with Section 7 (a)(2) of the Endangered Species Act, the NPS will consult with the U.S. Fish and Wildlife Service before initiating any actions in an area where a proposed or listed species or its habitat occurs or has the potential to occur in the action area. Detailed consultation procedures are outlined in the Southwestern Region Environmental Compliance Handbook.

## **Section 12 - BACKCOUNTRY CAMPING**

Backcountry camping is allowed throughout Buffalo National River without permits.

Regulations:

--Except for gravel bars on the Buffalo River, camping is not permitted within **100** feet of a flowing stream, **river** or body of water.

--Installation of permanent camping facilities by the public is prohibited. Equipment may not be left **unattended** for more than 24 hours.

--Camping is limited to a **total** of 30 days in a calendar year.

--Except for designated sites at developed campgrounds, camping is prohibited within **1/2** mile of developed areas.

--Unless otherwise indicated, campfires are permitted in all areas of the backcountry. Only dead and down material may be collected for firewood. Open fires may be prohibited during periods of extreme fire danger or in

specific areas.

--Camping is prohibited in Lost Valley (except in designated campground), and from Hemmed-in-Hollow falls downstream to the first trail intersection and on Big Bluff ("the Goat Trail").

--Historic districts/zones, hay fields under agricultural Special Use Permits, Use and Occupancy Reservations, private lands and all structures are closed to camping. A list of current closures is contained in the *Compendium of Superintendent's Orders* (revised annually).

Backcountry camping permits are not required for backcountry campers. Permits may be considered for specific areas or seasons if other management actions to achieve established standards fail.

#### Recommended Group Sizes for Backcountry Camping

In Zone 1 areas, the recommended group size limit is 6 persons for overnight use. In Zone 2 areas, the recommended group size limit is 12 for overnight use. In Zone 3 or 4 areas, the recommended group size is 25 for overnight use. The use of portable toilet systems by boating or vehicle parties of 12 or more persons is strongly recommended.

#### Designated Backcountry Campsites

Numerous studies (Cole, 1989) indicate most campsite impacts occur during the first few nights of use. It is therefore preferable to concentrate use on a few sites rather than disperse use to a large number of different sites.

Designated backcountry campsites may be established in Zones 2, 3 or 4 to help limit impacts to appropriate sites or limit the creation of numerous new sites in a heavy use area. Appropriate backcountry campsites may also be designated for parties using stock. Designated sites would be recommended, indicated on hand-out maps and available on a first come, first serve basis.

Limiting camping to designated sites may be required in popular areas where existing sites are located in sensitive sites or sites are numerous and coalescing into large disturbed areas. Such restrictions are unlikely for traditional gravel bar camping.

Recommended "Leave No Trace" backcountry practices for backpacking, stock parties, and floaters are listed in Appendix H.

## Section 15 - STOCK USE

### Objectives:

- Provide opportunities for horseback riding in a wilderness/backcountry setting on trails and routes which can accommodate such use without unacceptable resource impact.
  
- Provide appropriate vehicle accessible, camping areas for groups with stock.
  
- A stock-use brochure describing minimum impact stock use techniques will be developed specifically for Buffalo National River.

Horseback riding in the backcountry and wilderness areas of Buffalo National River is a popular recreational use. Within areas designated as **Special Horse Use Zones**, stock use will be restricted to designated horse trails, primitive routes and the non-travelled portion of roads open to motor vehicles. Special Horse Use Zones will be established in areas where designated horse trails are maintained. In larger areas where no designated horse trails are maintained horses may be used on abandoned roads, gravel bars, and old traces.

### Special Horse Use Zones;

- ✧ All areas from the northern boundaries of the Upper Buffalo Wilderness Unit (southern end of Boxley Valley) east to Highway 7.
  
- ✧ All areas in the Lower Buffalo Wilderness Unit within ¼ mile of the Cook Hollow/Cow Creek Trail and the entire area encircled by the trail.

As additional horse trails are developed, additional Special Horse Use Zones may be established in those areas. Maintained trails currently designated for stock use are listed in Appendix C.

### **Recommended Group Size for Stock Groups Camping in Backcountry Sites**

In Zone 1, maximum recommended group size for stock parties camping in backcountry sites is a combination of 8 persons and stock (Example; 4 persons and 4 horses). In Zone 2, stock parties should be limited to a combination of **12** persons and stock. In Zone 3 and 4, stock parties should be limited to a combination of 24 persons and stock. These recommendations are voluntary guidelines.

Stock may not be left unattended unless tethered to a hitch rail, picket line or tether. Stock may not be tied to trees. The use of temporary hitch lines are recommended for backcountry camps. Stock are not allowed to graze in maintained hay fields.

#### Frontcountry Horse Camps:

A frontcountry horse camp is defined as a designated campsite provided exclusively for stock groups and accessible to motor vehicles and horse trailers. These camps are not considered backcountry campsites.

Currently, designated frontcountry horse camps are located at Steel Creek, Erbie and Woolum. Additional sites will be considered near Pruitt and Carver once stock trails are completed in those areas. Criteria for the establishment of additional frontcountry horse camps include:

- Availability of an adequate water source for stock.
- Accessibility to trails open to stock use.
- Previously disturbed sites, such as agricultural fields, will be selected whenever available.

Site capacities, in terms of both number of stock and number of people, and regulations for horse camps are established by the Superintendent. Use of these camps by larger groups will require prior approval of the Superintendent through a special use permit.

#### Commercial Horse Use

Commercial services are discussed Section 18. Commercial horse operations will be govern by the laws, regulations and policies described in that section and the provisions described here. All commercial horse operations will be authorized with concession contracts rather than commercial use licenses.

Commercial horse trail ride operations are considered an appropriate visitor service for certain areas of the National River. The location and type of commercial horse use will be determined by the NPS based upon the **necessary** and appropriate criteria of the Concessions Policy Act. Locations proposed by adjacent property owners, to facilitate a commercial enterprise, may not meet these criteria, be needed by the public nor be compatible with area resources.

Commercial horse operations will be limited to designated horse trails. They will not be authorized in designated wilderness areas.

## **Section 16 - SPECIAL ISSUES**

Hunting and Hunting Dogs: Hunting is permitted in Buffalo National River in accordance with the regulations of the Arkansas Game and Fish Commission. These regulations allow the use of dogs when used to hunt in accordance with Commission regulations. Hunting dogs are not permitted for deer, bear, or coyote hunting.

Motor Vehicle Use: Motor vehicles are permitted only on those roads identified as public roads in the Buffalo National River Road System Evaluation Plan. Roadways not designated in this plan are closed to motor vehicle use. Off-road travel by motor vehicles is prohibited throughout the National River. All motor vehicles must have a valid state vehicle registration. All roads, lands and waters within Buffalo National River are closed to the operation of all-terrain three and four wheel vehicles or similar vehicles intended for off-road use.

Bicycles: Bicycles are permitted on all roads **open to motor vehicles**(See previous section). Bicycles are prohibited on all other trails, routes and areas unless otherwise designated by the Superintendent (36 CFR **4.30a**). Possessing a bicycle in a wilderness area is prohibited (36 CFR **4.30(d)(1)**).

## **Section 17 - CULTURAL RESOURCES**

The backcountry areas of Buffalo National River, including its wilderness areas, still bear ample evidence of human occupation and use during historic and pre-historic periods. Abandoned roads, buildings, fences, and mines, are widely scattered throughout the backcountry. A systematic Cultural Site Inventory and Cultural Landscape Survey under current National Register criteria is incomplete. Several backcountry and wilderness structures, including cemeteries, are currently listed on the NPS List of Classified Structures.

A Memorandum of Agreement (**MOA**) between the Department of the Interior and the Advisory Council on Historic Preservation (**USDI 1978**) was signed in 1975. The MOA lists steps to be taken to locate and protect cultural resources at Buffalo National River which would be affected by implementation of the BNR Master Plan and Wilderness Recommendation are adequately mitigated. Properties eligible for the National Register are to be preserved: historic structures will be maintained; archeological sites are to be left untouched except for selective excavation. The NPS will consult with the State Preservation Officer and the Advisory Council on

any action which has the potential to adversely affect cultural resources.

**Historic Structures:** Numerous structures including buildings, ruins, roads, fence lines, and mines exist within the National River's wilderness area. One structure, the WPA era Cold Springs School in the Lower Unit, is listed on the National Register of Historic Places (listed **10/29/93**). The Pickle Edgmon barn in the Upper Unit is a contributing structure to the Boxley Historic District.

Preservation maintenance will continue on resources listed or eligible for listing on the National Register. Once a resource is determined to be ineligible, all maintenance will cease. Other structures located within wilderness will not be maintained.

**Archeological Sites:** The National Park Service maintains an inventory of archeological sites within the park. Backcountry facilities, such as trails or campsites, will only be constructed after a cultural resource inventory and assessment have determined that the facility will not impact significant sites.

## **Section 18 - COMMERCIAL SERVICES**

Commercial services includes guided trips or services which collect a fee in excess of the actual personal costs of the trip and/or for payment of other than actual personal trip expenses for guides or leaders. This includes nonprofit organizations providing a livelihood for people through provision of these services.

Commercial activities are limited to those necessary for visitor's use and enjoyment which will not impair the park's resources (NPS Management Policies, Chap. **10:3**). Commercial operations are usually authorized by either a concessions contract or a commercial use license. Concessions are subject to provisions of the Concessions Policy Act of 1965, NPS regulations (36 CFR 51) and the NPS Concessions Management Guideline (NPS-48). Concessions are generally granted to a limited number of operators for a particular activity. A commercial use license (CUL) is used to authorized commercial activities which are initiated and terminated outside of the park boundaries. CULs are limited to two year terms.

The Concession Policy Act of 1965 states,

*"... the Congress hereby finds that the preservation of park values requires that public accommodations, facilities and services as have to be provided within these areas should be provided only under carefully controlled safeguards against unregulated and indiscriminate use, so that the heavy visitation will not unduly impair these values and so that development of such facilities can best be limited to locations where the least damage to*

*park values will be caused "*

Commercial use of the backcountry may be authorized by the Superintendent if such use meets the "necessary and appropriate" tests of the 1965 Concessions Policy Act and is consistent with the objectives stated in Buffalo National River's approved planning documents. For the purpose of carrying out the Concessions Policy Act, the following definitions apply:

**Necessary** - required to meet the needs of the visitor/public.

**Appropriate - compatible** with the park's natural, cultural, and/or recreational resource(s), recognizing the purpose of the established area. (U.S.D.I. Concessions Management Guideline, 1986).

**CULs** will include specific limits on group size, operational routes, health and safety requirements, and designated camping (if any) and rest areas. Proposed **CULs** will be evaluated based upon criteria related to suitability of the trail and potential conflicts with other uses.

The National Park Service authorizes 25 canoe or johnboat rental operations under concession contracts to operate in backcountry areas of Buffalo National River (See Section 3, River Uses). There are no current **CULs**.

## Section 19 - SUMMARY OF NEEDS

Many of the **activities** identified within this plan are already incorporated into existing operations at Buffalo National River. To implement other activities will require either additional staff resources or reprogramming of existing staff responsibilities.

### Monitoring Programs

**River Use Survey** - Standards related to river use require the monitoring of the number of boats using individual river segments. Currently, river use numbers are only available for each District (Upper, Middle, and Lower). A monitoring system for each river segment would rely principally upon tallies of receipts from canoe concessions along with periodic actual river counts to verify the percent of total use in private boats. Concession receipts contain information on dates, number of boats, and the segment of the river floated. For the information to be useful it must be entered into a computer data-base. Once entered reports could be generated for compliance with the standards for river use, monthly public use reports, and concession specialist reports. Data entry would be the most expensive

part of this monitoring program.

Trail Use Survey - The trail standard dealing with the number of encounters per day will require the initiation of a monitoring program. This monitoring program would rely upon electronic trail counters, trailhead registers, and periodic counts of actual trail use. These would be used to develop an estimate of the number of encounters likely on a given trail with a given number of people using it per day.

Trail Counters - Electronic trail counters would be located near major trailheads. Counters would provide both daily and monthly estimates of use which can be compared to trail register results and periodic verification counts.

Trail Registers - Trail registers will be placed at major trailheads. Registration cards will provide information on trail use including dates, overnight use, destinations, groups sizes, and feedback from users regarding problems. These trail use number can be compared to trail counter readings to verify amount and timing of use.

River Litter Survey - Development and implementation of a monitoring program to determine the amount of litter along the river. In order to develop a quantitative index of river litter from recreational use, beverage containers will be collected and counted on sample segments of the river.

Backcountry Sign Inventory - Develop a complete inventory of all backcountry signs. Assigned through District Maintenance Supervisors, each district should complete and maintain an inventory of the location, wording, and type of backcountry sign in their area.

Increased Backcountry Patrols - Due to staffing limitations and an emphasis on providing law enforcement coverage to developed areas (i.e. campgrounds) in evening hours, backcountry patrols during peak use periods are currently insufficient. More contacts with backcountry visitors are needed to provide safety and "no trace" backcountry information. This function can either be accomplished through realignment of existing positions (leaving law enforcement problems in developed areas unaddressed) or establishment of additional seasonal positions dedicated to backcountry patrol work.

"No Trace" Camoina Education Program - An aggressive and coordinated program to educate and motivate backcountry users in "no trace" practices is needed. Many backcountry visitors still practice high impact camping techniques, such as cutting live vegetation for tent poles, building fire rings, and burying or burning trash. The

design and implementation of this program should involve a team approach with staff from Interpretation, Resource Management, and field patrol Rangers.

Trail Maintenance Crew - An extensive trail system already exists and regardless of the alternative selected, trail maintenance needs will increase. Currently trail maintenance is entirely reactive and is carried out on a collateral basis by seasonal fire crews, volunteers, or patrol Rangers.

Acquisition of Nonfederal Interests within Wilderness Areas - Several forms of nonfederal property interests still exist within the Buffalo National River Wilderness Area. These include fixed term Use and Occupancy Reservations, private ownership (see Section 9 regarding Camp Orr), subsurface mineral interests, and road easements. The Committee Report (No. 12536) from the U.S. House of Representatives directed the NPS to acquire all nonfederal interests within the wilderness boundaries with the exception of one tract belonging to the Boy Scouts of America at Camp Orr. The Lands Division of the Southwest Regional Office has been actively identifying and acquiring mineral interests. Additional efforts are required to ensure that all such interested are identified and acquired,

## Section 20 - ASSIGNMENT OF RESPONSIBILITIES

Resource Management: The Resource Management Division is responsible for the following:

- Developing and implementing a system for the monitoring of trail and campsite conditions.
- Developing a monitoring system for the indicators described in Section 6.
- Providing technical guidance with regard to all resource monitoring conducted in backcountry and wilderness areas.
- Developing a data base management program for storing and accessing data from the monitoring system.
- Preparing annual reports summarizing backcountry and wilderness program activities and all uses of motorized equipment and mechanized transport in wilderness areas. Preparing, with the assistance of District Rangers, annual work plans which outline backcountry management projects for the coming year.
- Making recommendations to the Superintendent with regard to appropriate

backcountry and wilderness management actions.

District Rangers: District Rangers are responsible for ensuring that the following activities are carried out in their respective districts:

--Day to day management of wilderness and backcountry areas through patrols, campsite rehabilitation, oversight of commercial use, etc. as provided in this plan.

--Maintaining a updated backcountry sign inventory. Request replacements for missing or damaged signs from Maintenance.

--Enforcing rules and regulations throughout the backcountry and wilderness areas.

--Providing information and training on "No Trace" techniques to concession employees and the public.

Maintenance Division: Maintenance Foremen are responsible for ensuring that the following activities are carried out in their respective districts.

--Performing trail maintenance and coordinating trail projects that are carried out by NPS employees, Youth Conservation Corp crews and volunteer groups.

--Constructing and installing trail signs and roadside signs related to trails.

Interpretive Division: The Chief of the Interpretive Division is responsible for the following:

--Developing interpretive brochures and programs encouraging minimum impact backcountry use techniques for Buffalo National River.

--Ensuring backcountry use messages are included in interpretive talks, the park newspaper and off-site programs.

--Developing, as an integral part of the Interpretive Prospectus, a comprehensive interpretive program which communicates the significance of wilderness and provides the public with information concerning the use and enjoyment of wilderness.

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## APPENDIX A

### **National Parks and Recreation Act of 1978, Public Law 95-625 (11/10/78).**

A Summary of those portions of the Act related to wilderness designation at Buffalo National River.

#### **Title IV - Wilderness**

##### **Sec. 401 - Designation of Areas**

*The following lands are hereby designated as wilderness in accordance with section 3(c) of the Wilderness Act (78 Stat. 890: 16 USC 1132(c)), and shall be administered by the Secretary in accordance with the applicable provisions of the Wilderness Act:*

*(1) Buffalo National River, Arkansas, wilderness comprising approximately ten thousand five hundred and twenty-nine acres and potential wilderness additions comprising approximately twenty-five thousand four hundred and seventy-one acres depicted on a map entitled "Wilderness Plan, Buffalo National River, Arkansas" numbered 173 20,036-B and dated March 7 1975, to be known as the Buffalo National River Wilderness.*

##### **Sec. 402 - Map and Description**

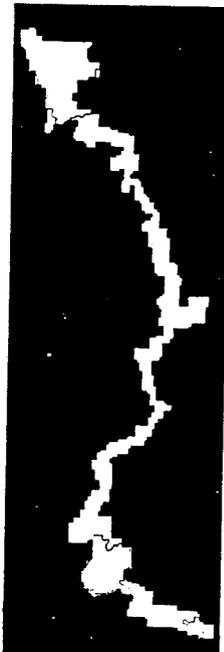
*A map and description of the boundaries of the areas designated in this title shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the Office of the Superintendent of each area designated in this title. As soon as practicable after this Act takes effect, maps of the wilderness areas and description of their boundaries shall be filed with the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, and such maps and descriptions shall have the same force and effect as if included in this Act: Provided, That correction of clerical and typographical errors in such maps and descriptions may be made.*

##### **Sec. 403 - Cessation of Certain Uses**

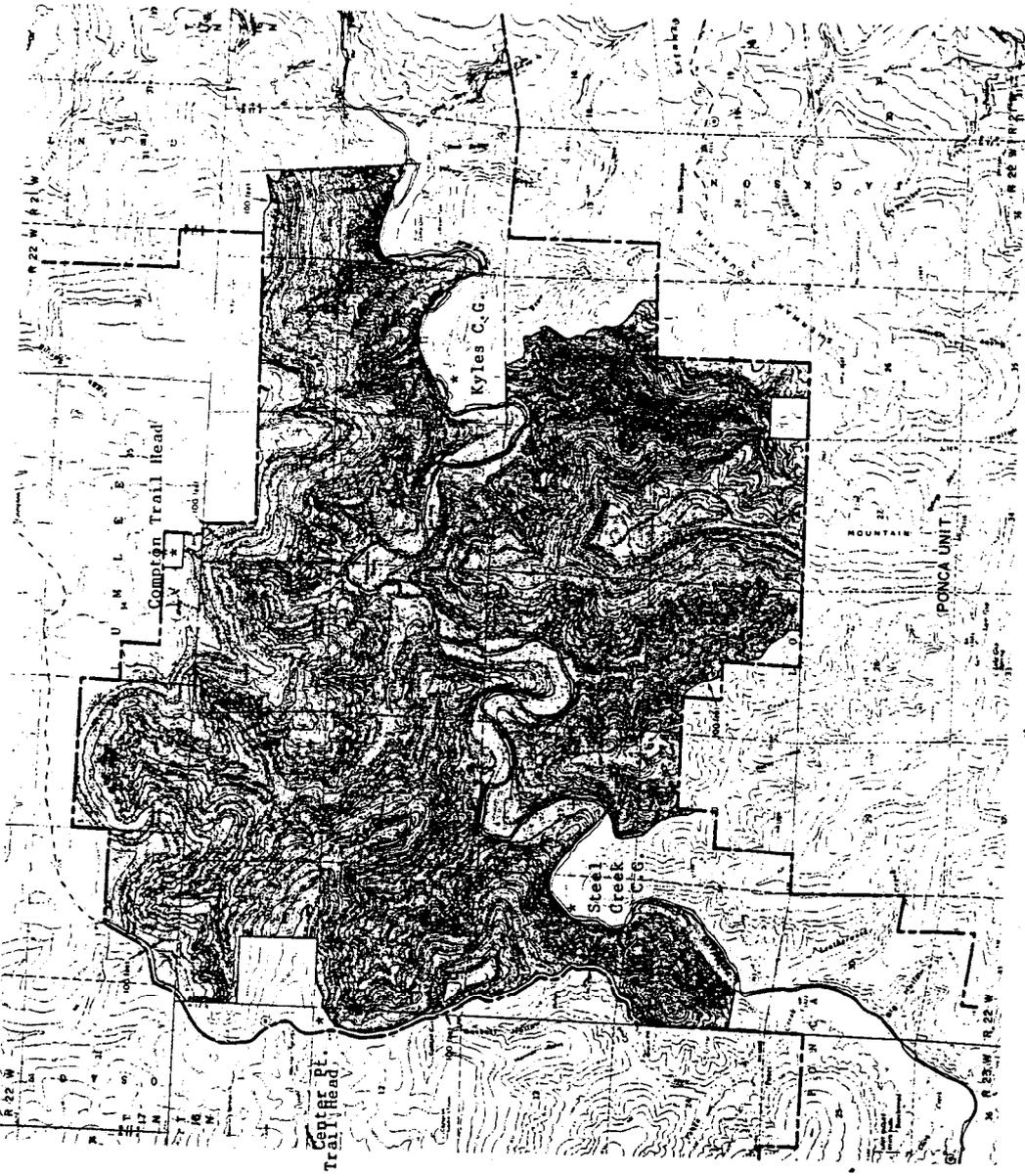
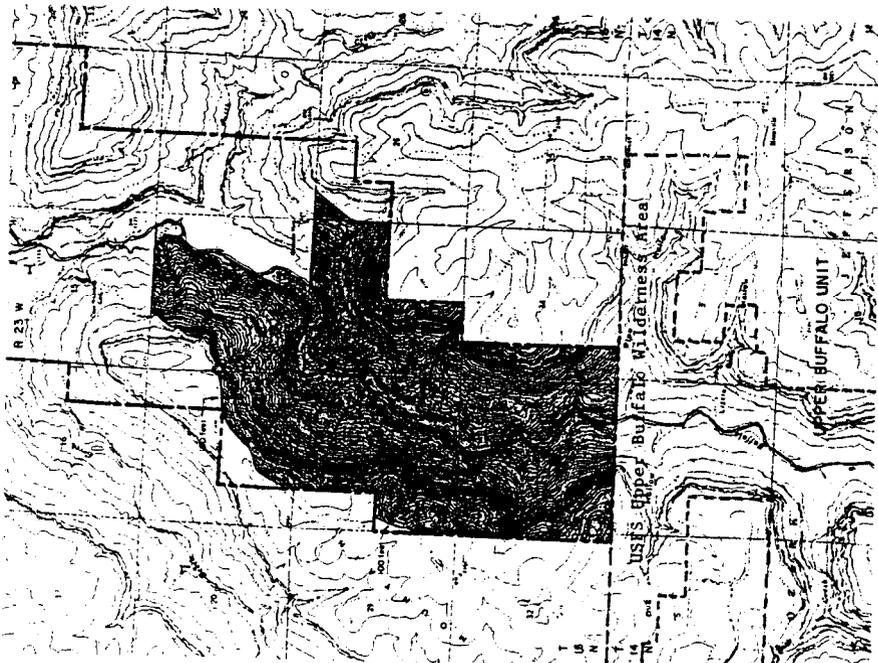
*Any lands which represent potential wilderness additions in this title, upon publication in the Federal Register of a notice by the Secretary that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness. Lands designated as potential wilderness additions shall be managed by the Secretary insofar as practicable as wilderness until such time as said lands are designated wilderness.*

##### **Sec. 404 - Administration**

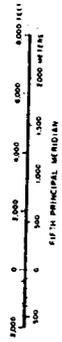
*The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.*



SEGMENT INDEX



- NATIONAL RIVER BOUNDARY
- ▨ WILDERNESS AND POTENTIAL WILDERNESS ADDITION
- NONWILDERNESS

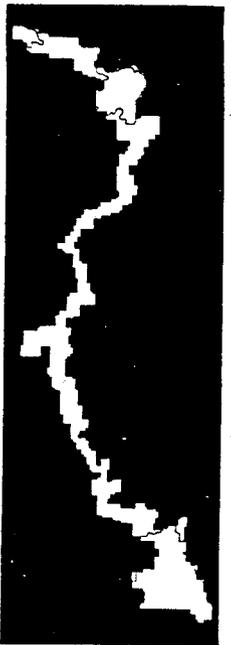


**BUFFALO NATIONAL RIVER WILDERNESS**  
 AS DESIGNATED BY PUBLIC LAW 95-625 DATED NOVEMBER 10, 1978

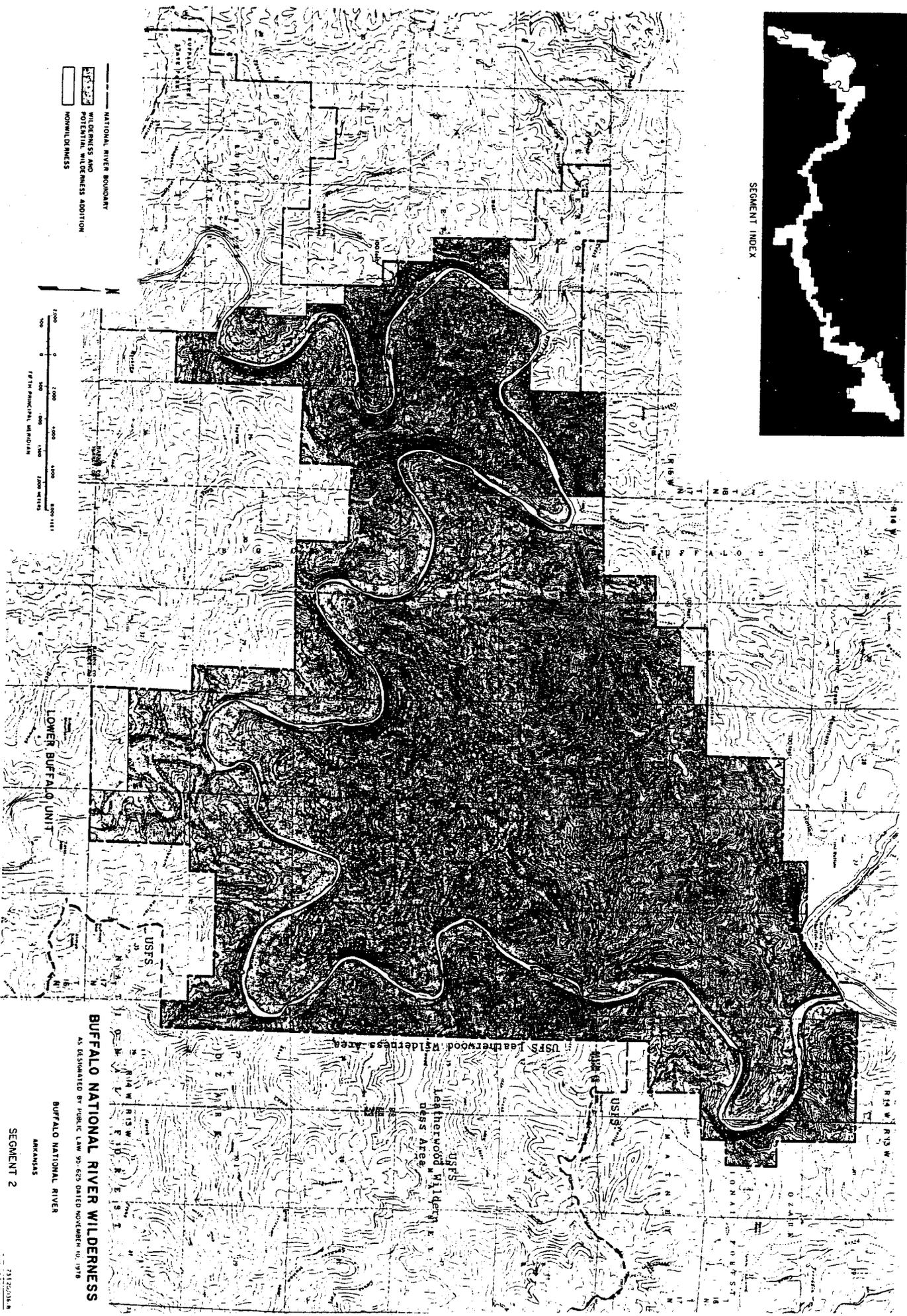
BUFFALO NATIONAL RIVER

ARKANSAS

SEGMENT 1



SEGMENT INDEX



NATIONAL RIVER BOUNDARY  
 POTENTIAL WILDERNESS ADDITION  
 NONWILDERNESS

1:25000  
 1" = 2000 FEET  
 1:50000  
 1" = 1000 METERS

**BUFFALO NATIONAL RIVER WILDERNESS**

AS DESIGNATED BY PUBLIC LAW 95-625 DATED NOVEMBER 10, 1978

BUFFALO NATIONAL RIVER

ARKANSAS

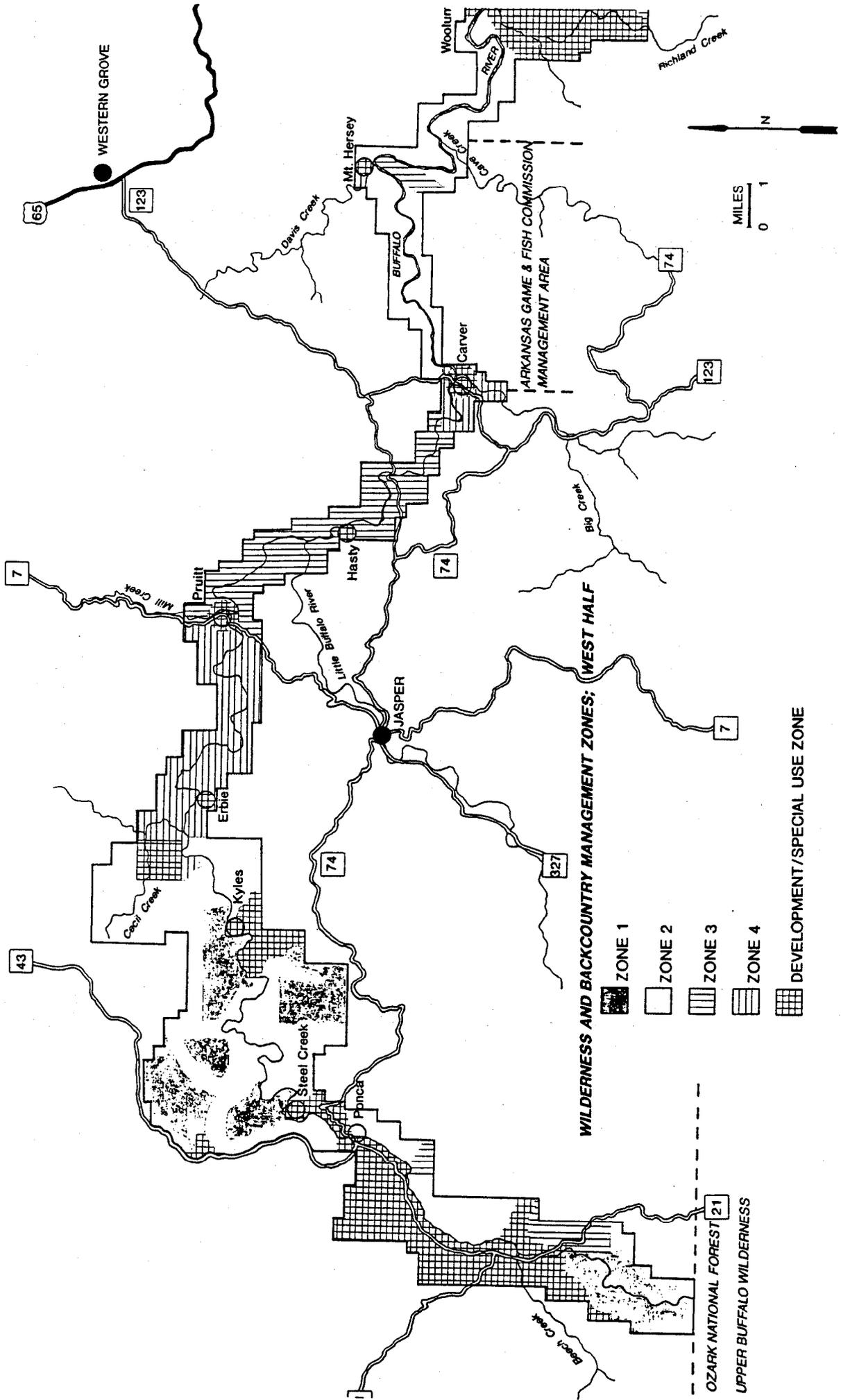
SEGMENT 2

## APPENDIX c

### Buffalo National River Backcountry Trail System Inventory; 7/94

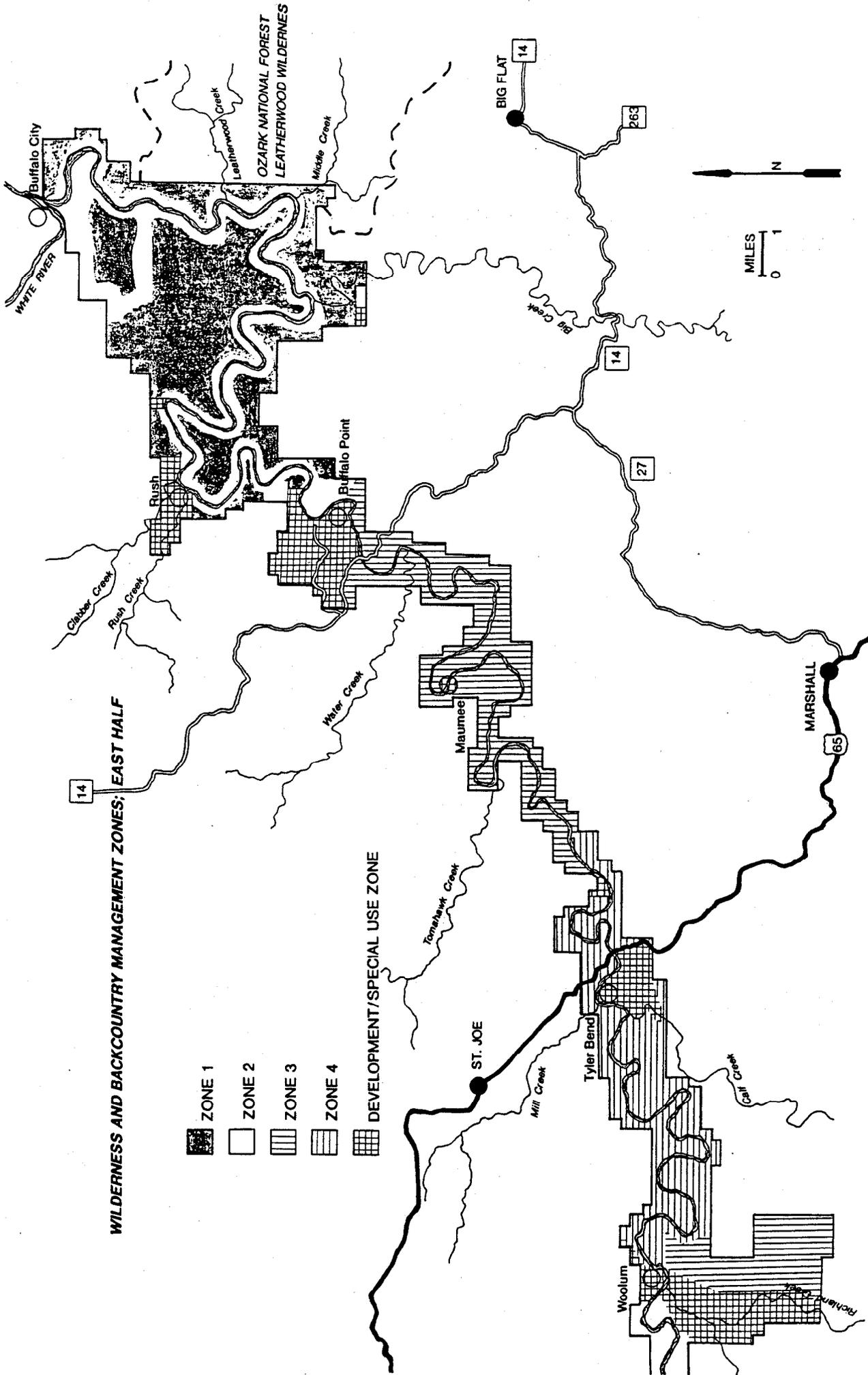
Trail Name	District	Mileage	Horse Use?	Wilderness?
Buffalo River	Upper	36.8	No	7.4 miles
Old River	Upper	13.2	Yes	5.7 miles
Center Point	Upper	3.6	Yes	All
Sneed's Creek	Upper	4.1	Yes	All
Hemmed-in-Hollow	Upper	3.5	No	All
Horseshoe Bend	Upper	1.5	No	All
Farmer	Upper	1.0	Yes	None
Cecil Cove	Upper	5.3	Yes	None
Bench	Upper	4.4	Yes	All
Point Peter Bench	Middle	2.9	Yes	None
Buffalo River	Middle	7.6	Yes	None
Cow Creek	Lower	10.5	Yes	All

This inventory reflects the backcountry trail system as of 7/94. It does not include all primitive and unmaintained routes, including abandon roads, which may also be traveled by hikers and horseback riders. It does not include trails in developed areas such as Tyler Bend or Buffalo Point.



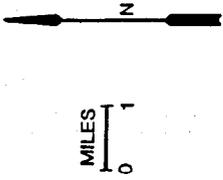
**WILDERNESS AND BACKCOUNTRY MANAGEMENT ZONES: WEST HALF**

-  ZONE 1
-  ZONE 2
-  ZONE 3
-  ZONE 4
-  DEVELOPMENT/SPECIAL USE ZONE



**WILDERNESS AND BACKCOUNTRY MANAGEMENT ZONES; EAST HALF**

- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4
- DEVELOPMENT/SPECIAL USE ZONE



Buffalo City

WHITE RIVER

Leatherwood Creek

OZARK NATIONAL FOREST  
LEATHERWOOD WILDERNES

Little Creek

BIG FLAT

14

263

Big Creek

14

27

Rush

Crabber Creek

Rush Creek

Water Creek

Buffalo Point

Maumee

Tomhawk Creek

ST. JOE

Mill Creek

Tyler Bend

MARSHALL

65

Woolum

Carl Creek

Richman Creek

# APPENDIX E

## Backcountry Trail Standards

Trail Type/Management Zone	Grades (10% = 10 ft. rise in 100 linear feet)	Tread Width (in.)	Right-of-Way Clearing	Fords & Bridges	Signing & Route Marking
Zone 1, wilderness areas	NA	NA	NA	NA	NA
Hiking/Zone 2 and wilderness	Average 1-10%, maximum of 15% for short distances Provide rock steps for grades over 15%	18	Maximum of seven feet high and four feet wide	Foot bridges will not be provided	Minimal use at trail intersections of: Rustic wood-routed signs with; -Directional information only -No distance (miles to) information Blazes and rock cairns for fords & crossing of non-system abandoned roads & Primitive Routes
Horse/Zone 2 and wilderness	Average 1-7%, maximum of 10% for short distances	24	Maximum of 10 ft. high and 6 ft. wide	Same as above	Same as above
Hiking/Zone 3 & 4	Average 1-10%, maximum of 15% for short distances Provide steps for grades over 15%.	18-24	8 ft. high and 5 ft. wide	Simple rock & plank foot bridges will be used on smaller streams when required to prevent trail widening	Rustic wood routed at trail intersections with; - Trail destinations - Distance - Information on significant features
Horse/Zone 3 & 4	Average 1-7%, maximum of 10% for short distances No Steps	24-36	10 ft. high and 8 ft. wide	Stream fords may be improved by moving large rocks to enhance footing	Same as above
Primitive Routes/All zones	Average 1-10%; 20% maximum for short distances	NA	-Maximum of 10 ft. height and 6 ft. wide. -No cutting of live trees greater than 2 inches in diameter (dbh) -Hand tools only	Same as standards for Zone 2 and wilderness	Route markers (preferably rock cairns) may be used to delineate routes in locations where off-route travel has become or is likely to become a management problem. Brushing in intersecting undesignated routes will also be utilized. Regulatory signs may be used for significant

**Appendix F**

Buffalo National River  
WILDERNESS  
MINIMUM TOOL DECISION QUESTIONNAIRE

If this action is covered in an approved planning document, **do not complete this form.**

**PROPOSED ACTION:**

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[When considering Wilderness values/resources, address: natural and cultural resources, solitude, primitive character, visitor experience, research effects, and recreation resources.]

1. What are the alternatives to the proposed action?

2. What long and short term impacts to Wilderness values are associated with each alternative?

3. What mitigating measures can be taken in association with each alternative?

4. How will the proposed action (if **non-emergency**) contribute to the management of Wilderness resources?

Comments:

Action Approved:-

Action Denied:-

\_\_\_\_\_  
Superintendent

\_\_\_\_\_  
(Date)

## Appendix I

### LEAVE NO TRACE GUIDELINES

#### PLAN AHEAD

1. Avoid popular areas during times of high use.
2. Repackage food into reusable containers to pack out with you.

#### TRAVEL LIGHTLY

1. Visit in small groups.
2. Stay on designated trails.
3. Do not cut across switchbacks.
4. Read your map and do not mark trails with tree scars or flagging.
5. Step to the downhill side of the trail and talk softly when encountering horseback riders.

#### CAMP WITH CARE

##### Campsite

1. Choose an existing site whenever possible. Restrict activities to the area where vegetation is already compacted or absent.
2. Camp at least 75 paces (200 feet) from streams and trails. The only exception are harden sites such as gravel bars with little or no vegetation.
3. Do not construct structures, furniture, or dig trenches.
4. Good campsites are found, not made - altering the site should be unnecessary.

##### Camofires

1. Eliminate campfire scars by using a lightweight stove for cooking.
2. When fires are utilized, use existing fire rings, away from large rocks or overhangs.
3. Do not char rocks by building new fire rings.
4. Gather smaller sticks from the ground that are no larger than the width of your wrist.
5. Do not snap branches of live or standing dead trees.
6. Put out fires completely before leaving. Remove trash from the ring.

##### Sanitation

1. Deposit human waste at least 75 paces (200 feet) from water or camp in **catholes** dug 6 to 8 inches deep. Deposit toilet paper and fill the **cathole** with soil when finished.
2. To wash dishes or yourself, carry water away from the source and use small amounts of biodegradable soap. Scatter dishwater away from water sources.
3. Large groups or long stays may require digging a latrine or use of a lightweight portable toilet.
4. Scour your campsite for trash (including micro-trash such as burnt matches, twist-ties, etc.) and evidence of your stay. Pack out all the trash you can - even if it's not yours.

#### KEEP WILDERNESS WILD

1. Let natural sounds and quiet prevail. Avoid loud noises.
2. Control pets at all times, or leave them at home.
3. Treat our natural heritage with respect. Leave plants, minerals, and historical artifacts where they are found.